Public Review Draft

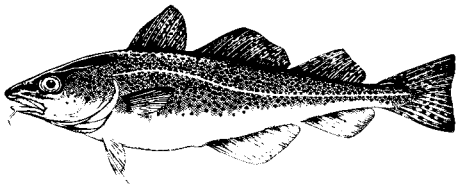
ENVIRONMENTAL ASSESSMENT/REGULATORY IMPACT REVIEW/
INITIAL REGULATORY FLEXIBILITY ANALYSIS

for proposed

AMENDMENT 68

to the Fishery Management Plan for
Bering Sea/Aleutian Islands Groundfish

Allocation of Pacific Cod Among Pot Gear Sectors



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May 14, 2002

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Executive Summary

Beginning in 1997, Amendment 46 to the Fishery Management Plan for the Groundfish Fishery of the Bering Sea and Aleutian Islands Area (FMP) allocated the total allowable catch (TAC) for Bering Sea/Aleutian Islands (BSAI) Pacific cod among jig gear, trawl gear, and fixed gear (hook-and-line and pot). It reserved two percent of the TAC for jig gear, 51 percent for fixed gear, and 47 percent for trawl gear. The amendment also split the trawl apportionment between catcher vessels and catcher processors 50/50, but it did not split the fixed gear allocation between hook-and-line and pot vessels.

In October 1999, the Council approved BSAI FMP Amendment 64, which split the fixed gear allocation of Pacific cod between the hook-and-line catcher processors, hook-and-line catcher vessels, and pot sectors in the BSAI. The Council allocated 80 percent of the fixed gear share of the Pacific cod TAC to hook-and-line catcher processors, 0.3 percent to hook-and-line catcher vessels, 1.4 percent to pot and hook-and-line catcher vessels < 60' length overall (LOA), and 18.3 percent to pot vessels. The amendment was approved by the U. S. Secretary of Commerce in July 2000, and implemented by final rule on August 24, 2000 (65 FR 51553). Amendment 64 became effective on September 1, 2000.

At the time the Council approved Amendment 64, it acknowledged that a further split among the pot sector may be necessary to ensure the historical harvest distribution among pot catcher processors and pot catcher vessels in the BSAI Pacific cod fishery. Concern was expressed that the pot sector needed the stability of a direct gear allocation, much like was done for the hook-and-line catcher processors and catcher vessels under Amendment 64. However, because the public had not been noticed that this action may be taken under Amendment 64, the Council decided to delay action specific to the pot sector and include the proposal in a follow-up amendment (BSAI FMP Amendment 68).

Further changes to the BSAI cod fishery occurred in April 2000 when the Council approved BSAI FMP Amendment 67. Amendment 67 requires that vessels fishing with hook-and-line and pot gear that are participating in the BSAI Pacific cod fishery must qualify for a Pacific cod endorsement, which would be part of the participant's License Limitation Program (LLP) license. Eligibility for a cod endorsement is based on past participation in the BSAI fixed gear fisheries during specific combinations of the years 1995-1999. Four different endorsements will be available, depending on the gear used to harvest cod (hook-and-line or pot) and whether the cod was processed on board the harvesting vessel (catcher vessel or catcher processor). Amendment 67 exempts catcher vessels less than 60 feet LOA from the requirement to have a cod endorsement to participate in the BSAI fixed gear cod fisheries. Amendment 67 effectively granted exclusive access to longtime participants in the BSAI fixed gear cod fishery, and thus reduced the number of allowable participants, including the number of eligible pot vessels. This amendment was approved by the Secretary on November 14, 2001, and the implementing regulations will be in place for the 2003 fishing season.

This analysis for Amendment 68 was initially reviewed by the Council in February 2001 and the document was made available for public review with recommended revisions by the Council. However, because of the potential implications of Amendment 67 and the uncertainty of implications related to management measures being developed to protect the Steller sea lion, the Council decided to delay final action on Amendment 68 pending resolution of these issues. With both Secretarial approval of Amendment 67 and completion of the Steller Sea Lion Protection Measures Final Supplemental Environmental Impact Statement in November 2001, the Council scheduled final action for Amendment 68 in June 2002.

Problem Statement

The Council adopted a problem statement for Amendment 68 in December 2000 and revised it at the February 2001 meeting (see below). The problem statement addresses the need for separate, direct allocations of BSAI Pacific cod to the pot catcher processor and pot catcher vessel fleets, to ensure the catch distribution that has historically occurred between the two sectors. Without direct allocations, the concern is that increased competition for the cod resource may cause the catcher vessel sector to encroach on the catcher processors' historic harvest level.

Problem Statement adopted by the Council for proposed Amendment 68 to the BSAI groundfish FMP.

The catcher processor and catcher vessel pot fisheries for Pacific cod in the Bering Sea/Aleutian Islands are fully utilized. Competition for this resource has increased for a variety of reasons, including increased market value of cod products and a declining ABC/TAC.

Pot catcher processors who have made significant long-term investments, have long catch histories, and are significantly dependent on the BSAI cod fisheries need protection from pot catcher vessels who want to increase their Pacific cod harvest. This requires prompt action to promote stability in the BSAI pot cod fishery until comprehensive rationalization is completed.

Alternatives for Consideration

Amendment 68, which proposes direct allocations of BSAI Pacific cod to pot catcher processors and pot catcher vessels, utilizes the same options as considered by the Council for the hook-and-line and pot gear BSAI Pacific cod split in Amendment 64. The percentages in the Council's preferred alternative for Amendment 64 closely represent harvests in this fishery over the period 1995-1998. Amendment 68 would further split the 18.3 percent allocated to pot vessels under Amendment 64 between pot catcher processors and pot catcher vessels, based on recent catch histories.

Two primary alternatives were examined in this analysis, based on the options provided in Amendment 64. The only change to the original alternatives is the addition of Options 5 and 6, which include 1999 catch histories. At the time the Council took action on Amendment 64, catch data for 1999 was not available and thus the Council's action was based only on historical data through 1998. Catch history for 1999 has since been made available and is included in the suite of options for Council consideration as the most recent participation data available prior to the implementation of Amendment 64. The alternatives examined in this analysis are as follows:

Alternative 1: No action. BSAI Pacific cod TAC for the pot sector (18.3% of the hook-and-line and pot gear share of the BSAI Pacific cod TAC) would not be further allocated among the pot catcher processor and pot catcher vessel sectors.

Alternative 2: Apportion the BSAI Pacific cod pot gear TAC (18.3% of the hook-and-line and pot gear share of the BSAI Pacific cod TAC) among pot catcher processors and pot catcher vessels. The split may be apportioned according to recent catch histories to be determined as a percentage of cumulative catches of the pot gear BSAI Pacific cod TAC by pot sector for:

Option 1: 1996, 1997
Option 2: 1997, 1998
Option 3: 1996, 1997, 1998
Option 4: 1995, 1996, 1997, 1998
Option 5: 1995, 1996, 1997, 1998, 1999
Option 6: 1996, 1997, 1998, 1999

Suboption: Any portion of the Pacific cod pot catcher processor or pot catcher vessel quota that is unused by a specified date will be reallocated as follows:

a) Unused quota from either pot sector would be distributed to the other pot sector before it is rolled over to the other fixed gear sectors
b) Unused quota from the pot catcher vessel sector would be distributed to the hook-and-line catcher vessel sector before it is rolled over to the pot catcher processor sector.

The 2001 fishery is considered the baseline scenario under Alternative 1, as it is the most recent year for which preliminary data is available. The 2001 harvest data shows that 83% of the pot quota was harvested by pot catcher vessels and 17% by catcher processors (including reallocated quota). However, the no action alternative relates to the catch and revenue distributions that would occur if no further allocation of the pot gear share of the BSAI Pacific cod TAC was implemented, and is thus not accurately represented by a static point in time. Each pot sector will exhibit varying levels of effort which will fluctuate annually depending on a number of other factors, including the prices and effort in other (primarily crab) fisheries. In addition, the fixed gear allocations approved in Amendment 64 were not in place until mid-2000, and the Pacific cod endorsements under Amendment 67 will not be effective until January 1, 2003. Thus, these two significant changes were not in effect during the years under consideration (1995-1999). Given the difficulty associated with making predictions regarding effort in other fisheries and the numerous regulatory changes that have recently occurred in the fishery, the status quo was generally characterized in this document and the 2001 fishery was used as a baseline for comparison.

In general, the options considered by the Council under Alternative 2 would allocate between 24 and 25 percent of the pot vessel Pacific cod TAC to pot catcher processors, and between 75 and 76 percent to pot catcher vessels. These percentages represent the distribution of the pot harvests in this fishery during 1995-99. This split of the pot quota would result in allocations of 4.4 - 4.6% of the total hook-and-line and pot (fixed gear) BSAI cod TAC to pot catcher processors and 13.7 - 13.9% to pot catcher vessels. The analysis calculates the options both including and excluding catch that was reallocated (rolled over) from other gear sectors, so that the Council may evaluate the impacts of both methods. However, including roll-over catch in the calculations varies the historical split among pot sectors only slightly and does not change the resulting percentage allocations to each pot sector overall.

It is also important to note the implications of Amendment 67. The options developed to split the share of the pot cod TAC are based on harvest histories from 1995-1999, when Amendment 67 and the License Limitation

Program were not yet in place. The pot cod catch histories that form the basis for the percentage split among the pot sectors are thus based on the catch of substantially more vessels than are currently eligible to fish BSAI pot cod under the current management regime and more vessels than will be eligible in the future upon implementation of Amendment 67. Approximately 203 catcher vessels (178 of which were ≥60') and 19 catcher processors contributed to the harvest history which determined the splits proposed in this amendment. However, since the implementation of the LLP and upon implementation of Amendment 67, about one-third of each pot sector is estimated to remain eligible to participate in the BSAI Pacific cod fishery (47 pot catcher vessels ≥60' and 6 pot catcher processors).[1]

Information on Amendment 67 is provided for consideration with the understanding that these are only preliminary estimates of the numbers of vessels that will qualify for a Pacific cod endorsement in the future. Because of the time necessary to conduct appeals of interim licenses, the effect of the program on the number of vessels fishing BSAI cod with fixed gear will not be seen immediately and is to some degree uncertain.

The sectoral split among the subset of vessels that appear to be both LLP qualified and eligible for a Pacific cod endorsement is very similar to the split that results from using the catch of all pot vessels that participated in 1995-99. The potentially endorsed pot catcher processors harvested 23% - 25% of the total *endorsed* pot harvest among the options and pot catcher vessels harvested 75% - 77%. Thus, while the historical distribution among *all* participating vessels would result in an allocation of 4.4% - 4.6% of the total fixed gear TAC to pot catcher processors and 13.7% - 13.9% to pot catcher vessels, the historical distribution based on catch histories of only the subset of '*endorsed*' vessels would result in a slightly lower allocation to catcher processors (4.3% - 4.6%) and slightly higher allocation to catcher vessels (13.7 - 14.0%). The greatest difference among any of the options using these two methods to calculate the pot allocations is 0.2%, which equates to about 188 mt using the 2002 fixed gear TAC.

In sum, while the implication of Amendment 67 is significant with regard to the estimated *number* of vessels that would be eligible to fish BSAI Pacific cod in the future, it does not raise significant issues with regard to the cod *allocations* between pot sectors that result under the proposed options. In addition, while the cumulative effect of Amendments 67 and 68 on the pot cod fleet is important to consider, the overall allocative effect mirrors that of Amendments 64 and 67 on the hook-and-line sector. The difference remains in the timing of the actions; Amendment 64 first established separate TACs for the hook-and-line catcher vessels and catcher processors and, subsequently, Amendment 67 reduced the fleet of eligible participants by establishing criteria for a cod endorsement. In the case of the pot sector, Amendment 67 first reduced the fleet of eligible participants by establishing endorsement criteria, and Amendment 68 has been subsequently proposed to split the pot cod TAC among endorsed pot catcher vessels and catcher processors. Therefore, with the exception of the timing, the proposed action does not treat the pot cod fleet substantively different from the other fixed gear sectors fishing BSAI cod.

The analysis uses estimates of 1998 ex-vessel and first wholesale prices and the 2002 TAC to derive projections of gross revenues for the pot catcher vessel and catcher processor sectors under each of the options. Ex-vessel revenues for pot catcher vessels range from $5.44 to $5.52 million under proposed Options 1-6, whether or not the rollover harvest is included. Compared to the ex-vessel revenue ($6.04 million) projected using the 2001 baseline harvest percentages, ex-vessel revenues decrease for the catcher vessel sector under the proposed options by 9 - 11%.

[1]Recall that vessels <60' are not required to have a cod endorsement under Amendment 67 (16 unique pot catcher vessels <60' participated in the directed BSAI cod fishery during 1995-1999).

Similarly, estimates of first wholesale revenue were calculated for both the pot catcher vessel (shoreside deliveries) and catcher processor sectors based on the allocations that would result from Options 1-6. Pot catcher processor revenues from cod would range from $4.81 to $5.03 million, and revenues from pot catcher vessel deliveries would range from $11.87 to $12.04 million, at the first wholesale level. Compared to the 2001 harvest (baseline), first wholesale revenues for the pot sector as a whole increase under the proposed options, due to the increased harvest by catcher processors and the higher first wholesale price attributed to catcher processor catch. Compared to the baseline scenario (2001), projected first wholesale revenues from the pot sector as a whole increase by a range of $0.30 - $0.34 million.

Issues related to reallocation of unused quota

Because a sector of the BSAI Pacific cod fishery may not be able to harvest its entire allocation in a given year due to halibut bycatch constraints or, in the case of the jig fishery, insufficient effort in the fishery, the Council also provided direction under Amendment 64 on how unused quota should be reallocated (rolled over) to the fixed gear sector. Quota reallocated from the jig or trawl sectors is apportioned among the hook-and-line catcher processor and pot sectors according to the actual harvest of roll-overs from 1996-1998: 95 percent is reallocated to the hook-and-line catcher processor fleet and the remaining 5 percent is reallocated to the pot fleet. **Should the Council choose to split the 5 percent of reallocated quota among the pot sectors using the same method, approximately 24 percent of the quota reallocated to the pot fleet would be apportioned to pot catcher processors and 76 percent to catcher vessels.** Including 1999 data in the average does not change the overall distribution among pot sectors. Should the Council choose not to take any action to apportion reallocated quota among the pot sectors, it is assumed that both pot gear groups would compete for the 5 percent reallocation as defined under Amendment 64.

During initial review, the Council also included a suboption which would apply to any of the options under consideration in Alternative 2. The suboption addresses how unused quota in either pot sector would be distributed to other sectors late in the season. **Suboption a** would allocate any quota that is projected to go unharvested in either pot sector to the other pot sector before it is reallocated to any other gear sector. This suboption mirrors the approach taken in the hook-and-line sector. Amendment 64 states that any portion of the hook-and-line catcher vessel and the <60' pot and hook-and-line vessel allocation that is projected to remain unused shall be reallocated to the hook-and-line catcher processor fleet in September. **Suboption b** would allocate any quota that is projected to go unharvested in the pot catcher vessel sector to the hook-and-line catcher vessel sector before it is rolled over to the pot catcher processor sector.

Neither suboption is expected to affect whether fixed gear cod quota will go unharvested, as it is anticipated that the timing of the reallocations will continue to allow for the full harvest of the quota regardless of which sector receives the quota. The impact of Suboption b depends upon whether or not the hook-and-line catcher vessel fleet is capable of harvesting its entire allocation in a given year. The hook-and-line catcher vessel fleet has fully harvested its allocation since Amendment 64 established the fixed gear allocations in 2000, including some reallocated quota, and may have the capability to increase its efforts even though it is difficult to predict the number of unique vessels that will be fishing in the future under Amendment 67. Regardless of the preferred suboption, it may be most effective to view the suboptions as setting an order of preference of recipients of reallocated quota, and allow the Regional Administrator to make the inseason determination regarding which sector is capable of harvesting the quota and subsequently allocate the quota to that sector.

Summary

In sum, the decision points under Amendment 68 are as follows:

- **Alternative 1** - no action, or
- **Alternative 2** - establish separate, direct allocations to the pot catcher processor and pot catcher vessel sectors in the BSAI Pacific cod fishery
    - If Alternative 2 is preferred, select a method to determine the split among the pot sectors (**Options 1-6**)
    - Determine whether to also apportion reallocated quota the pot sector may receive annually from the trawl and jig sectors (5%) among pot catcher vessels and pot catcher processors
    - Determine how to reallocate quota unused by the pot sector on an annual basis (**Suboption**)

The alternatives and options for consideration in this amendment are expected to have no significant biological impacts. The intent of the proposed amendment is to provide each pot sector with a direct allocation approximating the historical catch distribution among the pot gear sectors of the BSAI Pacific cod fishery. By preserving the harvests of each pot gear sector, such as was approved by the Council for the hook-and-line fleet, the action would be expected to further stabilize the Pacific cod pot fishery's impacts on the human environment. Under the proposed options, which are based on harvests during 1995-1999, the pot catcher vessel sector harvested 75% - 76% of the pot share of the BSAI Pacific cod quota and the pot catcher processor sector harvested 24% - 25%. **These options would result in direct allocations of 13.7% - 13.9% and 4.4% - 4.6% of the total hook-and-line and pot gear allocation of BSAI Pacific cod TAC (93,850 mt in 2002) to pot catcher vessels and catcher processors, respectively.**

None of the alternatives or options change the harvest of BSAI Pacific cod by the pot sector as a whole (18.3% of the total hook-and-line and pot gear allocation of the BSAI Pacific cod TAC). Because there is little variation among the allocations resulting from the options, any slight shift in effort between the catcher vessel and catcher processor sectors as a result of the options would likely have little corresponding impact on incidental catch of "other species," as well as marine mammals such as Steller sea lions.

None of the alternatives is expected to result in a "significant regulatory action" as defined in E.O. 12866. None of the alternatives is likely to significantly affect the quality of the human environment, and the preparation of an environmental impact statement for the proposed action is not required by Section 102(2)(C) of the National Environmental Policy Act or its implementing regulations.

The Council voted to sunset Amendment 64 on December 31, 2003, meaning that the regulations implementing the allocations established for the hook-and-line and pot cod fishery, including the 18.3% allocated to pot vessels, will expire at that time. Upon expiration of Amendment 64, it is assumed that any further split of the pot gear share of the BSAI Pacific cod TAC among catcher vessels and catcher processors will become ineffective. Thus, while the Council may choose to apply a sunset date to Amendment 68, it is uncertain how soon this amendment would be approved by the Secretary and implemented in final regulation. Continuing the allocations of Pacific cod among the hook-and-line and pot gear sectors (or selecting new allocation percentages) in the BSAI after the sunset date will require Council and Secretarial approval of a new amendment. Given this timeframe, the Council may choose not to establish a sunset date for Amendment 68, in order to allow this action to conform to the duration of Amendment 64. If the Council does not sunset Amendment 68, it may always reconsider or modify the action taken through the normal Council process.

1.0 INTRODUCTION

The groundfish fisheries in the Exclusive Economic Zone (3 to 200 miles offshore) of the Bering Sea and Aleutian Islands off Alaska are managed under the Bering Sea/Aleutian Islands Groundfish Fishery Management Plan as developed by the North Pacific Fishery Management Council (Council) under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The FMP was approved by the Secretary of Commerce and became effective in 1982.

Actions taken to amend the FMPs or implement other regulations governing the BSAI groundfish fisheries must meet the requirements of Federal laws and regulations. In addition to the Magnuson-Stevens Act, the most important of these are the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), the Marine Mammal Protection Act (MMPA), Executive Order (E.O.) 12866, and the Regulatory Flexibility Act (RFA). This Environmental Analysis/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) is intended to satisfy the requirements of these laws and regulations.

NEPA, E.O. 12866 and the RFA require a description of the purpose and need for the proposed action as well as a description of alternative actions which may address the problem. This information is included in **Section 1** of this document. **Section 2** contains information on the affected environment and baseline data, including background information on the Pacific cod pot gear fishery, catch, and revenues. **Section 3** contains an analysis of the environmental, social, and economic impacts of the proposed alternatives. The more specific analyses of the effects that are most relevant to NEPA and E.O. 12866 are in Sections 3.1 and 3.2, respectively. **Section 4** addresses the requirements of the Magnuson-Stevens Fisheries Management and Conservation Act (MSA), the Regulatory Flexibility Act, and other applicable federal laws. **Sections 5, 6, and 7** contain a list of references, agencies and individuals consulted, and preparers, respectively.

This EA/RIR/IRFA addresses alternatives for further allocating the pot sector's quota of Pacific cod (18.3% of the fixed gear BSAI Pacific cod total allowable catch) among the pot catcher processor and pot catcher vessel sectors.

1.1 Purpose of and Need for the Action

1.1.1 Background

Beginning in 1997, Amendment 46 allocated the total allowable catch (TAC) for BSAI Pacific cod among jig gear (2%), trawl gear (47%), and fixed gear (51%). The trawl apportionment was split between catcher vessels and catcher processors 50/50, but no split was adopted among the hook-and-line and pot vessels in the fixed gear sector.

Vessels began fishing in Federal waters off Alaska under the License Limitation Program (LLP) on January 1, 2000. Since the LLP was approved by the Council, changes in the fixed gear fisheries prompted industry to petition the Council to further allocate cod in the BSAI among the various sectors of the fixed gear fleets. Amendment 64 was initially reviewed by the Council in April 1999 and adopted at the October 1999 meeting. The fixed gear Pacific cod apportionments under Amendment 64 are as follows: 80% of the fixed gear apportionment is reserved for hook-and-line catcher processors, 0.3% for hook-and-line catcher vessels, 18.3% for pot vessels, and 1.4% for fixed gear catcher vessels <60' in length. These percentages fairly closely represent harvests in this fishery over the period 1995-1998. Amendment 64 was approved by the Secretary in July 2000, and was implemented by final rule on August 24, 2000 (65 FR 51553). The BSAI Pacific cod

fixed gear allocations and revised final 2000 harvest specifications under Amendment 64 became effective on September 1, 2000.

At the time the Council approved Amendment 64, it acknowledged that a further split among the pot sector may be necessary to stabilize the harvests of pot catcher processors and pot catcher vessels in the BSAI Pacific cod fishery. Concern was expressed that the pot sector needed the stability of direct gear allocations, much like was done for the hook-and-line catcher processors and catcher vessels under Amendment 64. However, because the public had not been noticed that this action may be taken under Amendment 64, the Council decided to delay action specific to the pot sector and include the proposal in a follow-up amendment.

Further changes to the BSAI cod fishery occurred in April 2000 when the Council approved BSAI FMP Amendment 67. Amendment 67 requires that fixed gear vessels participating in the BSAI Pacific cod fishery must qualify for a Pacific cod endorsement, which would be part of the participant's License Limitation Program (LLP) license. Eligibility for a cod endorsement is based on past participation in the BSAI fixed gear fisheries during specific combinations of the years 1995-1999. Four different endorsements will be available, depending on the gear used to harvest cod (hook-and-line or pot) and whether the cod was processed on board the harvesting vessel (catcher vessel or catcher processor). Amendment 67 exempts catcher vessels less than 60 feet LOA from the requirement to have a cod endorsement to participate in the BSAI fixed gear cod fisheries. Amendment 67 effectively granted exclusive access to longtime participants in the BSAI fixed gear cod fishery, and thus reduced the number of allowable participants, including the number of eligible pot vessels. This amendment was approved by the Secretary on November 14, 2001, and the implementing regulations are expected to be in place by the 2003 fishing season.

At the same time, as a result of a recent biological opinion, the Council and NMFS have been working to develop management measures to protect the Steller sea lion. The majority of the pot cod fisheries have been located within Steller sea lion critical habitat, thus any management measures restricting this fishery may have an effect on the overall distribution among the pot cod sector. The Steller Sea Lion Protection Measures Final Supplemental Environmental Impact Statement was completed in November 2001.

Due to the potential implications of Amendment 67 and the uncertainty of implications related to management measures being developed to protect the Steller sea lion, the Council decided to delay final action on Amendment 68 pending resolution of these issues. Upon Secretarial approval of Amendment 67 and implementation of management measures related to the Steller sea lion, the Council scheduled final action for Amendment 68 for June 2002.

1.1.2 Problem Statement

Amendment 68 proposes implementing separate allocations to pot catcher processors and pot catcher vessels. In essence, this action would further split the 18.3 percent of the fixed gear Pacific cod TAC allocated to pot vessels between pot catcher processors and pot catcher vessels, based on recent catch histories. Amendment 68 is expected to have a similar impact as Amendment 64, the intent of which is to extend the same approach to rationalization and stabilization to the pot cod fleet as was used for the hook-and-line fleet. The analysis utilizes the same options as were considered by the Council for the fixed gear BSAI Pacific cod split in Amendment 64 (with the addition of 1999 data).

The Council adopted a problem statement for Amendment 68 in December 2000 and revised it at the February 2001 meeting (see box below). The problem statement addresses the need for separate, direct allocations of BSAI Pacific cod to the pot catcher processor and pot catcher vessel fleets, to ensure the catch distribution

that has historically occurred between the two sectors. Without direct allocations, the concern is that increased competition for the cod resource may cause the catcher vessel sector to encroach on the catcher processors' historic harvest level.

Problem Statement adopted by the Council for proposed Amendment 68 to the BSAI groundfish FMP.

The catcher processor and catcher vessel pot fisheries for Pacific cod in the Bering Sea/Aleutian Islands are fully utilized. Competition for this resource has increased for a variety of reasons, including increased market value of cod products and a declining ABC/TAC.

Pot catcher processors who have made significant long-term investments, have long catch histories, and are significantly dependent on the BSAI cod fisheries need protection from pot catcher vessels who want to increase their Pacific cod harvest. This requires prompt action to promote stability in the BSAI pot cod fishery until comprehensive rationalization is completed.

Increased prices for Pacific cod, reduced crab guideline harvest levels, and shortened or canceled crab seasons due to low resource abundance have resulted in increased harvests of Pacific cod by vessels using pot gear. This concern was the impetus for Amendment 64, in which separate allocations were established for the pot and hook-and-line sectors of the BSAI cod fishery. At this point, the public had not been noticed about creating a separate cod allocation for pot catcher processors and pot catcher vessels, thus this action was delayed to a subsequent amendment because there remained a concern that one pot sector could encroach on another's historical distribution of the harvest. In the meantime, long-term cod fishermen were also concerned about the erosion of their harvest shares in the cod fishery by new entrants, who, until recently, focused activity in other fisheries. This concern, combined with the problem of latent licenses, spurred the subsequent adoption of Amendment 67, which reduced the effort in the BSAI fixed gear cod fishery to those long-term participants who met specific qualification year and landing criteria. Thus, Amendment 67 will limit efforts in the fishery to a much reduced pot fleet. Amendment 68 was carried forward to address the historical distribution of the pot cod catch among pot catcher processors and catcher vessels, recognizing that implementation of Amendment 67 will change the number of participating vessels in the pot fleet substantially.

1.2 Alternatives Considered

The two primary alternatives proposed are based on the options considered in Amendment 64. At the time the Council took action on Amendment 64, catch data for 1999 was not available and thus the Council's action was based only on historical data through 1998. Options 5 and 6 under consideration for this action include the 1999 data. The alternatives examined in this analysis are as follows:

1.2.1 Alternative 1: No Action

BSAI Pacific cod TAC for the pot sector (18.3% of the fixed gear Pacific cod TAC) would not be further allocated among the pot catcher processor and pot catcher vessel sectors.

1.2.2 Alternative 2: Apportion the BSAI Pacific cod pot gear TAC among pot catcher processors and pot catcher vessels

Under BSAI Amendment 64, 18.3% of the fixed gear Pacific cod TAC is apportioned to the pot sector as a whole. Further apportioning the 18.3% allocated to pot vessels would result in a separate, direct allocation to pot catcher processors and pot catcher vessels. The split may be apportioned according to recent catch histories to be determined as a percentage of cumulative catches of the pot gear TAC of BSAI Pacific cod by pot sector for:

Option 1: 1996, 1997
Option 2: 1997, 1998
Option 3: 1996, 1997, 1998
Option 4: 1995, 1996, 1997, 1998
Option 5: 1995, 1996, 1997, 1998, 1999
Option 6: 1996, 1997, 1998, 1999

Suboption: Any portion of the Pacific cod pot catcher processor or pot catcher vessel quota that is unused by a specified date will be reallocated as follows:

a) Unused quota from either pot sector would be distributed to the other pot sector before it is reallocated over to the other fixed gear sectors
b) Unused quota from the pot catcher vessel sector would be distributed to the hook-and-line catcher vessel sector before it is reallocated over to the pot catcher processor sector.

Options 1-6 use catch histories from 1995 through 1999. Alternative 2 is presented two ways in the analysis: both excluding and including roll-over catch. If selecting an option under Alternative 2, the Council will need to specify whether roll-over catch should be included in the method used to determine the percentage distribution among pot sectors.

Recall that under Amendment 64, pot and hook-and-line vessels <60' are allocated 1.4% of the fixed gear Pacific cod TAC, distinct from the 18.3% allocated to all pot vessels. The intent is for pot catcher vessels <60' to fish off the 18.3% allocation to pot vessels of any vessel class first, and upon closure of that fishery, begin fishing the 1.4% allocation for vessels <60'. This amendment applies only to the cod allocation (18.3%) for pot vessels of any length, and does not affect the 1.4% allocation to catcher vessels <60'.

Amendment 64 also provides direction on how reallocated quota should be apportioned among the fixed gear fleet should the trawl sector of the BSAI Pacific cod fishery be unable to harvest its entire allocation in a given year due to halibut bycatch constraints or should insufficient effort exist in the jig fishery to harvest its entire allocation. The Council opted to apportion roll-overs from the jig or trawl sectors among the hook-and-line catcher processor and pot sectors according to the actual harvest of roll-overs from 1996-98, as opposed to using the formula applied to the overall allocation of the BSAI Pacific cod TAC among fixed gear sectors. Under this scenario, 95% of the cod roll-overs are allocated to the hook-and-line catcher processor fleet and the remaining 5% is allocated to the pot fleet. This analysis presents information using the same method to allocate the roll-over harvest among pot catcher processors and pot catcher vessels, should the Council wish to do so. Using this methodology, the 5% roll-over allocation to pot vessels would be further

split among pot catcher processors and catcher vessels based on the actual harvest of roll-overs from 1996-98 or, using the most recent available data, 1996-99.

The **suboption** provides direction on how to reallocate any unused pot cod quota in a given year. Two options are provided to redistribute any cod that is projected to remain unharvested: a) reallocate any unused pot quota from either pot sector to the other pot sector, or b) reallocate any unused pot catcher vessel quota to hook-and-line catcher vessels and then, if that is to remain unharvested, to pot catcher processors. Without providing explicit direction on this suboption, it is assumed that NMFS will address the rollovers as is currently done for the hook-and-line cod fisheries, which is similar to Suboption a. Currently in the BSAI fixed gear cod fishery, any amount of cod annually allocated to hook-and-line catcher vessels or to vessels less than 60 feet LOA that is projected to remain unharvested is reallocated (rolled over) to the hook-and-line catcher processor fleet in September. Suboption a would follow this example and reallocate any amount of cod annually allocated to one pot sector that is projected to remain unharvested to the other pot sector at some point in the second (B) season. Suboption b would provide for the opportunity for the hook-and-line catcher vessel fleet to harvest any unused pot catcher vessels quota before reallocation to the pot catcher processors.

As recommended by the Council, **Amendment 64 will sunset on December 31, 2003.** This means that the regulations implementing the allocations established for the fixed gear cod fishery overall, including the 18.3% allocated to pot vessels, will expire at that time. Upon expiration of Amendment 64, it is assumed that any further split of the pot cod TAC among catcher vessels and catcher processors will become ineffective. Continuing the allocation percentages of Pacific cod set forth in Amendment 64 (or changing them) will require Council adoption and NMFS' approval of a new amendment. Should the Council choose to split the pot cod TAC under Amendment 68, it is unlikely that, upon Secretarial approval, implementing regulations would be in place before mid-2003. Thus, the Council may not want to establish a sunset date for Amendment 68, in order to allow this action to conform to the duration of Amendment 64. If the Council does not sunset Amendment 68, it may always reconsider or modify the action taken through the normal Council process.

2.0 AFFECTED HUMAN ENVIRONMENT AND BASELINE DATA

An environmental assessment (EA) is required by NEPA to determine whether the action considered will result in significant impact on the human environment. If the action is determined not to be significant based on an analysis of relevant considerations, the EA and resulting finding of no significant impact (FONSI) would be the final environmental documents required by NEPA. An environmental impact statement (EIS) must be prepared for major Federal actions significantly affecting the human environment.

The purpose of the EA is to analyze the environmental impacts of the proposed Federal action to establish separate TACs for the pot catcher vessel and pot catcher processors sectors in the BSAI cod fishery and provide sufficient evidence to determine the level of significance. The human environment is defined by the Council on Environmental Quality as the natural and physical environment and the relationships of people with that environment (40 CFR 1508.14). This means that economic or social effects are not intended by themselves to require preparation of an EA. However, when an EA is prepared and socio-economic and natural or physical environmental impacts are interrelated, the EA must discuss all of these impacts on the quality of the human environment.

An EA must include a brief discussion of the need for the proposal, the alternatives considered, the environmental impacts of the proposed action and the alternatives on the human environment, and a list of document preparers. The purpose and alternatives were discussed in Sections 1.1 and 1.2, and the list of preparers is in Section 5. This chapter describes the affected human environment as defined above, including the natural and physical environment (Section 2.1) and the relevant demographic, economic, and fisheries data pertaining to the pot fishery (Section 2.2). The environmental impacts of the proposed action, as well as the economic and social impacts, are the subject of Section 3.0. Thus, the environmental assessment as required by NEPA is not completely encapsulated in this section, only the affected environment is described here. The document as a whole is intended to satisfy the EA requirements under NEPA.

2.1 Natural and Physical Environment

2.1.1 Status of Pacific Cod Stocks and Other Pot Gear Target Stocks

Biological and economic impacts of the proposed action depend to some extent on current and future abundance of groundfish and crab stocks that are also targeted by the pot sector. A status report on Pacific cod and major crab stocks targeted by pot gear is provided below. This information is summarized from the Stock Assessment and Fishery Evaluation Reports (NPFMC 2001a). The SAFE or PSEIS (NMFS 2001b) can be consulted for detailed information on the biological status of groundfish stocks in the BSAI. Where applicable, species specific management measures (such as gear allocations) are highlighted.

Pacific cod *(Pacific cod stock information is from the 2001 BSAI Groundfish SAFE)*

Pacific cod (*Gadus macrocephalus*), also known as grey cod, are moderately fast growing and short-lived fish. Females reach 50% maturity at 67 cm (about 5.8 years old) and are highly fecund. A 67 cm cod will produce well over 1 million eggs. Spawning occurs January through April in the Bering Sea and February through July in the Gulf of Alaska. Annual natural mortality of adults has been estimated to be about 30% (M = 0.37). Cod prey on clams, worms, crabs, shrimp, and juvenile fish. In turn, they are eaten by halibut and marine mammals. Cod are demersal and concentrate on the shelf edge and upper slope (100-250 m) in the winter, and move to shallower waters (generally <100 m) in the summer. Cod begin to recruit to trawl

fisheries at age 3, but are not fully recruited to all gear types until about age 7. Maximum age has been estimated at 18 years based on otolith samples.

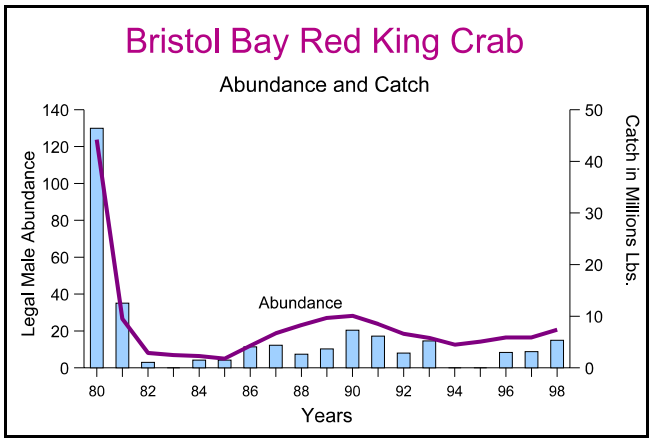
Model projections indicate that this stock is neither overfished nor approaching an overfished condition. The cod stock is considered relatively stable. The BSAI Pacific cod stock increased to high levels in the mid 1990s, then declined. The 2001 Eastern Bering Sea bottom trawl survey resulted in a biomass estimate of 830,000 tons, an increase of 57% from previous year's estimate, which was the lowest observed value for the survey. The Aleutian Islands were last surveyed in 2000; the biomass increased 63% from 1997. Estimates of abundance are higher for the 2001 assessment compared to the 2000 assessment. For example, estimated 2002 spawning biomass for the BSAI stock is 425,000 tons, up about 25% from last year's projection for 2002.

Biomass (mt, from survey data), pre-season catch specifications (mt), and total catches (mt, including discards) of Pacific cod in the BSAI, 1980-2002.

Year	EBS Biomass	BSAI ABC	BSAI TAC	BSAI Catch
1980	905,000	148,000	70,700	51,649
1981	1,035,000	160,000	78,700	62,458
1982	1,021,000	168,000	78,700	56,566
1983	1,176,000	298,200	120,000	93,167
1984	1,001,000	291,300	210,000	133,160
1985	961,000	347,400	220,000	145,426
1986	1,134,000	249,300	229,000	140,887
1987	1,142,000	400,000	280,000	157,746
1988	959,000	385,300	200,000	197,891
1989	960,000	370,600	230,681	168,918
1990	709,000	417,000	227,000	171,008
1991	532,000	229,000	229,000	172,158
1992	547,000	182,000	182,000	206,129
1993	690,000	164,500	164,500	167,390
1994	1,368,000	191,000	191,000	196,572
1995	1,003,000	328,000	250,000	233,029
1996	891,000	305,000	270,000	240,590
1997	605,000	306,000	270,000	234,641
1998	534,000	210,000	210,000	195,648
1999	583,000	177,000	177,000	160,084
2000	528,466	193,000	193,000	191,056
2001	830,479	188,000	188,000	163,951
2002	*	223,000	200,000	*

The 2002 age 3+ biomass was projected to be 1,540,000 mt. An $F_{40\%}$ harvest strategy, adjusted downward 12% by a risk-averse optimization procedure, resulted in an ABC for 2002 of 223,000 mt. The TAC was established at 200,000 mt, about 6 percent higher than the 2001 TAC. Spawning biomass is expected to decline through 2003, reaching a minimum of 407,000 tons. This projection is more optimistic than last years' assessment, which projected spawning biomass to reach a minimum of 314,000 tons in 2003.

Bristol Bay Red King Crab *(Crab stock information is from the 2001 Crab SAFE)*



After declining abundance throughout the 1960s and reaching a low during the years 1970-1972, recruitment to the Bristol Bay red king crab stock increased dramatically. New all-time record landings were established in each year from 1977 to 1980. Declining recruitment, fishing pressure, and probably increased incidence of disease and predation led to an abrupt decline in the fishery in 1981 and 1982. These precipitous declines led to a closure of the Bristol Bay fishery in 1983. In 1984, the stock showed some recovery and a limited fishery was reestablished. Between 1984 and 1993, the fishery continued at levels considerably below those of the late 1970s. Throughout the 1980s and 1990s there was little sign of a large year-class in this stock. Because the abundance of female crab was below

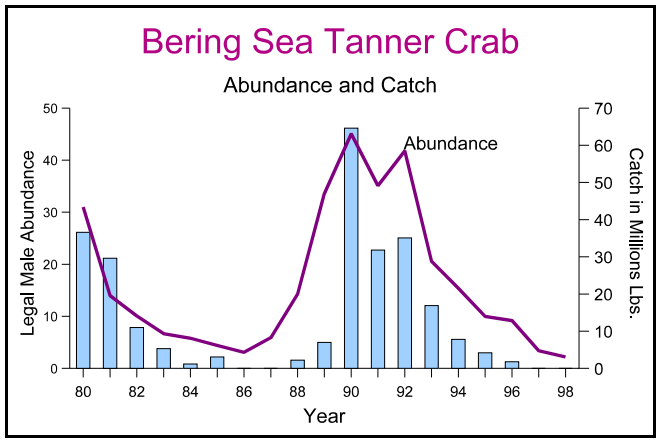
threshold, the Bristol Bay red king crab fishery was closed in 1994 and 1995. The fishery reopened in 1996, and catches increased to 16.4 million pounds in 1998, decreased to 11.1 million pounds in 1999, 8.4 million pounds in 2000, and 7.6 million pounds in 2001.

The effective spawning biomass is estimated to be less than 55 million pounds, a decrease from the 2000 survey estimate of 89.7 million pounds and the 1999 survey estimate of 111.7 million pounds. Overall, some decline in mature female abundance, estimated spawning biomass, and legal abundance should be anticipated for 2002. The Bristol Bay red king crab stock was estimated to be above the threshold for a fishery opening. Since the effective spawning biomass is below the target level of 55 million pounds, a 10% harvest rate was applied to the mature male abundance for determining the GHL,. The resulting 2001 GHL was 7.15 million pounds of legal males. Estimated spawning biomass and total mature biomass estimates for 2001 are essentially unchanged from the 2000 estimates. That stability is due largely to some recruitment to mature females in 2001.

Tanner Crab

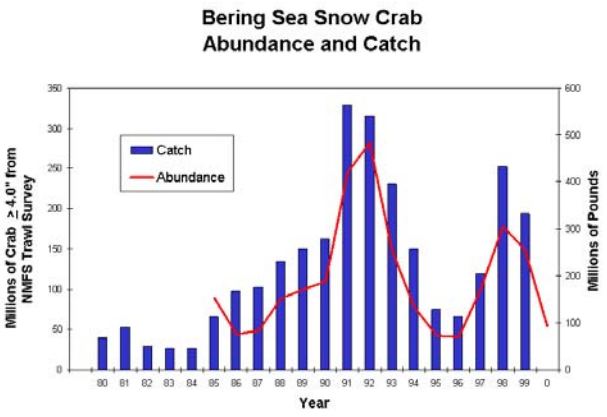
The Bering Sea Tanner (*C. Bairdi*) stock has undergone two large fluctuations. Catches increased from 5 million pounds in 1965 to over 36 million pounds in 1980. The 1980 peak catch was followed by a collapse resulting in low landings (<0.5 million lbs) from 1981-1985, and no fishery in 1986 and 1987. The fishery reopened in 1988, and landings increased to over 60 million pounds in 1990. A decline followed, and the fishery has been closed since 1997. ADF&G will reopen the fishery when the female biomass is above the threshold (21 million lbs of female biomass) and the fishery GHL is above the minimum identified in the rebuilding harvest strategy.

Abundance of this stock bottomed out in 1998 and is now increasing. The 1998 estimates of legal males and large females were the lowest in the history of the NMFS bottom trawl survey. The survey biomass estimate declined to 36.9 million lbs in 1998 and increased to 70.1 million lbs in 1999, 59.1 million lbs in 2000, and 67.7 million lbs in 2001. Based on overfishing definitions adopted under Amendment 7 to the BSAI King and Tanner crab FMP, the bairdi stock continues to be below the established minimum stock size threshold, and was declared "overfished" in 1997. The Council adopted a rebuilding plan for this stock in October 1999. The plan bases the GHL on a harvest rate of 20% of molting mature males when the biomass of females >79mm CW is ≥ 45 million lbs and a harvest rate of 10% of molting mature males when the biomass of females >79mm CW is less than 45 million lbs and at least 21 million lbs. Given the 2001 survey data, the stock is not anticipated to be above the "rebuilt" level (MSY biomass of 189.6 million pounds) in the next year.



Snow Crab

Catch of Bering Sea snow crab *(C. opilio)* increased from under 1 million pounds in 1974 to over 315 million pounds in 1992. The 1992 peak catch was followed by reduced landings through 1996. The stock quickly rebounded with good recruitment, however, and landings increased to 250 million pounds in 1998. Since 2000, however, the GHLs have been substantially reduced. The 2002 open access fishery opened January 15 with a GHL of 28.5 million pounds and was closed on February 8 with an estimated harvest of 30.26 million pounds. The CDQ fishery allocation is 7.5% of the total harvest of snow crab, or about 2.45 million pounds in 2002. The majority of the harvest and landings occurred in the Eastern subdistrict, with the remainder occurring in the Western subdistrict.



The 2001 spawning biomass survey estimate was 571 million pounds, an increase from the 2000 estimate of 427.7 million pounds and the 1999 survey estimate of 283.5 million pounds. In 1999, NMFS identified the stock as overfished because the stock was well below the minimum stock size threshold (460.8 million pounds). The stock will be considered "rebuilt" when the spawning biomass is above the MSY biomass of 921.6 million pounds. The size-frequency data for 2001 suggests that spawning biomass should continue to increase in 2002. Given the history of trends in spawning biomass for this stock, however, it is difficult to predict when the fishery will reach the "rebuilt" level. The Council adopted a rebuilding plan in June 2000, and it was approved by NMFS in January 2001.

Because of the low stock abundance and substantially reduced GHLs for 2000-2002, the recent seasons for the Bering Sea snow crab fishery season have been extremely short. Season length is influenced by the GHL, number of participating vessels, weather, and distribution of the species. Advancing sea ice and a higher probability of gear conflict, gear loss, and increased handling mortality prompted the Alaska Department of Fish & Game to delay the 2000 season until April 1, citing safety and resource considerations (ADF&G 2000b). The open access fishery closed a week later, on April 8, and reports indicated a harvest of 31.1 million pounds from 302 deliveries (ADF&G 2000a). Delays and short seasons exacerbate concerns in the pot gear BSAI Pacific cod fishery, as increased pressure results due to the availability of pot fishermen and decreased revenues from crab.

2.2 Description of the Pacific Cod Fishery

The most recent descriptions of the pot groundfish fishery are contained in the Economic Status of the Groundfish Fisheries Off Alaska, an appendix of the Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Bering Sea/Aleutian Islands Regions (NMFS 2001a) and the Draft Programmatic SEIS (NMFS 2001b). The SAFE document includes information on the catch and revenues from the fisheries, the numbers and sizes of fishing vessels and processing plants, and other economic variables that describe or relate to the performance of the fisheries. Sections 2.1.5 and 2.2.4 of the DPSEIS (Volume VII, Appendix I) describe the characteristics and activities of pot catcher vessels and pot catcher processors operating in the BSAI. In addition to reporting the catch and revenues from the BSAI Pacific cod fishery by pot vessels, that document contains detailed information on the owners by region of residence, the annual cycle of operations and dependence on the groundfish fisheries, and crew employment. Please see these documents for further details on the Pacific cod fishery in the BSAI.

The Pacific cod stock is targeted by multiple gear types, principally by trawls and smaller amounts by hook-and-line, jig, and pot gear. A history of Pacific cod catch in domestic fisheries is shown in Table 2.1. Catches from foreign trawl and hook-and-line vessels (through 1987) and joint venture trawling (1980-1990) are not included in the table. Trawl landings ranged from 82,000 to132,000 mt per year since the late 1980s; PSC halibut limits and later allocation decisions prohibited additional cod from being taken with trawl gear. Harvests from fixed gear vessels increased as these fisheries developed. Longline catch greatly increased from 1988 (2,611 mt) through 1995 (102,939 mt) and has since fluctuated around 95,000 mt. Vessels using pot gear began to make significant landings in 1990 (1,389 mt), increasing to1996 (32,617 mt). Pot fishery catches have slightly increased each year since 1998.

As stated previously, the BSAI Pacific cod TAC is currently allocated 2 percent to jig gear, 51 percent to fixed gear, and 47 percent to trawl gear. Under Amendment 64, 80% of the fixed gear apportionment is reserved for hook-and-line catcher processor vessels, 18.3% for pot vessels, 0.3% for hook-and-line catcher vessels, and 1.4% for fixed gear catcher vessels less than 60' length overall. Amendment 24 regulations allow seasonal apportionment of the Pacific cod TAC allocated to vessels using hook-and-line or pot gear. Seasonal apportionments are currently divided among two seasons and established through the annual specifications process. Both hook-and-line sectors currently have specified seasonal apportionments in 2002: the A season is Jan. 1 - June 10 and the B season is June 10 - Dec. 31. Any unused portion of a seasonal Pacific cod allowance is reapportioned to the next seasonal allowance, providing there is halibut bycatch allowance remaining. Any unused TAC from the jig or trawl gear fishery becomes available to the pot sector and the hook-and-line catcher processors in September.

Table 2.1: Catch (mt) of Pacific cod in the BSAI by gear type, 1985-2001

Year	Trawl	Longline	Pot	Jig	Total
1985	51,885	50	0	0	51,935
1986	38,430	49	63	0	38,542
1987	48,701	1,417	89	0	50,207
1988	95,404	2,611	329	0	98,344
1989	123,864	14,219	164	0	138,247
1990	122,425	47,716	1,389	0	171,530
1991	131,684	79,696	6,673	0	218,053
1992	90,264	101,249	13,681	117	205,311
1993	99,074	66,153	2,098	35	167,360
1994	100,542	87,138	8,254	730	196,664
1995	121,349	102,939	20,248	599	245,135
1996	113,089	94,701	32,617	267	240,674
1997	111,273	124,159	22,068	262	257,762
1998	81,903	99,921	13,632	192	195,648
1999	68,339	89,337	16,150	169	173,995
2000	53,815	97,823	18,783	3,207	191,056
2001*	50,751	96,669	16,507	71	163,951

* Preliminary data from weekly production and observer reports through December 31, 2001. Data (round weights) includes both retained and discarded catch.

Seasonal apportionments for the BSAI pot cod sector were first established in 2001 under an emergency rule to address Steller sea lion protection measures. Pot catcher processors and pot catcher vessels ≥60' are apportioned 60% of the overall pot allocation in the first season: January 1 - June 10, and the remaining 40% in the second season: August 15 - December 31. In 2002, under management measures provided for in the Steller Sea Lion SEIS (NMFS 2001c), the fall season was changed to September 1 - December 31. Any unused portion of a seasonal Pacific cod allowance is reapportioned to the next seasonal allowance. No seasonal harvest constraints are imposed on the catcher vessels <60' in the BSAI cod fishery.

2.2.1 History of BSAI Pacific Cod Allocations

Allocations of the BSAI Pacific cod Total Allowable Catch (TAC) among gear types began in 1993. Amendment 24 to the BSAI FMP established an explicit allocation of the Pacific cod TAC between gear types. The percentage allocations for the 1994, 1995, and 1996 fishing seasons were: trawl gear - 54 percent, fixed gear - 44 percent, and jig gear - 2 percent. These percentages roughly represented the 1993 harvest percentages of the two major sectors, trawl and hook-and-line, while allocating 2 percent to jig gear specifically. The 2 percent allocation to jig gear was more than was being taken by that gear type, but was designed to allow for some growth in that sector. At that time, the Council was in the initial stages of developing its Comprehensive Rationalization Plan (CRP), and the allocations established were consistent with the 1993 problem statement shown below, which emphasized the allocation as a stabilizing mechanism and bridge to overall comprehensive rationalization:

> *The Bering Sea/Aleutian Islands Pacific cod fishery, through overcapitalized open access management exhibits numerous problems which include: compressed fishing seasons, periods of high bycatch, waste of resource, gear conflicts and an overall reduction in benefit from the fishery. The objective of this amendment is to provide a bridge to comprehensive rationalization. It should provide a measure of stability to the fishery while allowing various components of the industry to optimize their utilization of the resource.*

Because the Amendment 24 Pacific cod allocations were scheduled to expire at the end of 1996, the Council placed discussion of this issue on the December 1995 meeting agenda, with the intent that an amendment be prepared to allow an allocation beyond 1996. At the December 1995 meeting, members of the Council identified changes which had taken place in the Pacific cod fishery since Amendment 24 went into effect on January 1, 1994. These changes were viewed as biological, economic, and regulatory in nature. In order to respond to these changes, staff was asked to incorporate these changes in the analysis, with specific focus on PSC mortality, impacts on habitat, and discards of Pacific cod by various industry sectors, under a range of possible percentage allocations to each gear type, which would be in place for another three years, through 1999. Though basic percentages were explicitly identified, the Council could choose an allocation percentage which is not explicitly identified, but is within that range. Further, the Council also requested that the analysis examine the sub-alternatives of further dividing the trawl sector allocation between catcher and catcher processor vessels in the Pacific cod fisheries. The range of that allocation was 60/40 and 40/60. In developing these alternatives, the Council also developed the following problem statement with regard to those allocation proposals:

> *The Bering Sea/Aleutian Islands Pacific cod fishery continues to manifest many of the problems that led the NPFMC to adopt Amendment 24 in 1993. These problems include compressed fishing seasons, periods of high bycatch, waste of resource, and new entrants competing for the resource due to crossovers allowed under the NPFMC's Moratorium Program. Since the apportionment of BSAI cod TAC between fixed gear, jig, and trawl gear*

was implemented on January 1, 1994, when Amendment 24 went into effect, the trawl, jig, and fixed gear components have harvested the TAC with demonstrably differing levels of PSC mortality, discards, and bycatch of non-target species. Management measures are needed to ensure that the cod TAC is harvested in a manner which reduces discards in the target fisheries, reduces PSC mortality, reduces non-target bycatch of cod and other groundfish species, takes into account the social and economic aspects of variable allocations and addresses impacts of the fishery on habitat. In addition, the amendment will continue to promote stability in the fishery as the NPFMC continues on the path towards comprehensive rationalization.

At the June 1996 meeting, the Council adopted Amendment 46 to continue allocations of Pacific cod TAC. The Council essentially approved an agreement negotiated by affected industry groups allocating Pacific cod in the BSAI. Under the agreement, 51 percent of the Pacific cod TAC was allocated to fixed gear, 47 percent to trawl gear and 2 percent to jig gear. Amendment 46 went into effect beginning in 1997. The specific provisions of the Amendment 46 as approved are shown in the box below.

Amendment 46: Pacific Cod Allocations in the Bering Sea and Aleutian Islands

1) TAC Apportionments:
The trawl sector will be allocated 47% of the BSAI Pacific cod TAC. The trawl apportionment will be split between catcher vessels and catcher processors 50/50.

The fixed gear sector will be allocated 51% of the BSAI Pacific cod TAC.

The jig gear sector will be allocated 2% of the BSAI Pacific cod TAC.

2) Roll-overs:
On September 15 of each year, the Regional Director shall reallocate 100% of any projected unused amount of the Pacific cod allocated to jig vessels to the fixed gear vessels.

If, during a fishing year, the Regional Director determines that vessels using trawl gear or hook-and-line or pot gear will not be able to harvest the entire amount of Pacific cod allocated to those vessels, then NMFS shall reallocate the projected unused amount of Pacific cod to vessels using the other gear type(s).

3) Halibut PSC Mortality Caps:
The trawl halibut PSC mortality cap for Pacific cod will be no greater than 1,600 mt.
The hook-and-line gear halibut PSC mortality cap for Pacific cod will be no greater than 900 mt.

4) Review:
There is no sunset provision, but the Council will review this agreement in four years following the date of implementation.

Following the allocation of the BSAI Pacific cod TAC among fixed, trawl, and jig gear in 1996, the Council initiated an analysis to examine allocation of BSAI Pacific cod among the various sectors of the fixed gear fleet. This action was proposed to promote stability in the fully utilized BSAI fixed gear cod fishery until comprehensive rationalization is completed. Amendment 64, which further split the Pacific cod fixed gear allocation between hook-and-line catcher processors, hook-and-line catcher vessels, and pot vessels, was brought to the Council for initial review in June 1999 and adopted at the October 1999 meeting. In July 2000, the Secretary approved the Council's preferred alternative to allocate Pacific cod among the fixed gear sectors in the BSAI as follows:

- 80% hook-and-line catcher processors
- 0.3% hook-and-line catcher vessels
- 1.4% pot or hook-and-line catcher vessels under 60'
- 18.3% pot vessels

Harvests by pot and/or hook-and-line catcher vessels <60' LOA only accrue against the 1.4% allocation after all pot or hook-and-line catcher vessels harvest the 18.3% and 0.3% set-asides, respectively. In addition, any unharvested portion of the catcher vessel hook-and-line and the under 60' pot and hook-and-line vessel quota that is projected to remain unused will be reallocated to the hook-and-line catcher processors in September; any unused jig or trawl quota will be apportioned among the hook-and-line catcher processor and pot sectors according to the actual harvest of rollovers from 1996-98; and bycatch of Pacific cod in other fixed gear fisheries will be subtracted from the overall fixed gear allocation before allocations for the directed fisheries are set. The fixed gear Pacific cod allocation set forth in Amendment 64 sunsets on December 31, 2003.

At the same time the Council initiated the analysis for Amendment 64, an analysis was initiated to support a follow-up amendment (Am. 67) to add a Pacific cod endorsement to licenses held by fixed gear vessels that qualify for a BSAI endorsement under the current LLP and meet specified qualification criteria. In April 2000, the Council defined qualification criteria for hook-and-line catcher processors, hook-and-line catcher vessels ≥60', pot catcher processors and pot catcher vessels ≥60'. In addition, the Council recommended that vessels <60' would not be required to have a cod endorsement to participate in the BSAI cod fishery. Because the Pacific cod endorsement is to be added to a vessel's Federal LLP license, the resulting number of vessels in each sector that qualify under the endorsement criteria depends on the number of vessels that are also LLP qualified. Until the NMFS appeals process is complete regarding LLP licenses, the number of vessels that qualify under the Council's preferred alternative in Amendment 67 is not final.

Required catch history to earn a Pacific cod endorsement under Amendment 67 was defined as follows:

- Freezer longliners must have made at least 270 mt of landings in the directed commercial BSAI Pacific cod fishery (excluding discards) in any one of the years 1996, 1997, 1998, or 1999.
- Longline catcher vessels ≥60' must have made at least 7.5 mt of landings in the directed commercial BSAI Pacific cod fishery (excluding discards) in any one year 1995, 1996, 1997, 1998, or 1999.
- Pot catcher processors must have made at least 300,000 lb of landings in the directed commercial BSAI Pacific cod fishery (excluding discards) in each of any two years 1995, 1996, 1997, or 1998.

- Pot catcher vessels ≥60' must have made over 100,000 lb of landings in the directed commercial BSAI Pacific cod fishery (excluding discards) in each of any two years 1995, 1996, 1997, 1998 or 1999.
- Jig landings of Pacific cod count toward the qualification requirements for pot catcher vessels and hook-and-line catcher vessels.

An initial review of the number of qualifying vessels shows that potentially 6 pot catcher processors,[2] and 47 pot catcher vessels ≥60' qualify under the Council's preferred alternative. The total effort in the pot catcher vessel sector, however, will be influenced by the level of participation in the <60' fleet, which was not restricted by Amendment 67. Recall that Amendment 64 also establishes a set-aside for vessels <60' of 1.4% of the fixed gear Pacific cod TAC. In selecting the no action alternative for vessels <60', the Council wanted to ensure that this small vessel class would be large enough to take their entire allocation. In considering the small number of participating vessels and the historical effort of the <60' fleet, the Council determined that limiting the <60' class was both unnecessary and detrimental to the small boat fleet. Therefore, because there are no gear endorsements in place for approximately 117 hook-and-line and pot vessels <60' that qualify for a general non-trawl BSAI groundfish LLP license, the potential exists for a maximum of 117 vessels <60' to fish Pacific cod in the BSAI using pot or hook-and-line gear. A more realistic estimate, however, may be based on the number of <60' vessels that have recently been participating in the BSAI Pacific cod fishery: 16 pot catcher vessels <60' qualify for a BSAI groundfish license and have made at least one BSAI Pacific cod landing since 1995.

During the period 1995-1999, a total of 203 pot catcher vessels and 19 pot catcher processors participated in the fishery (made at least one landing targeting cod). Since the LLP became effective, this fleet was reduced to 119 pot catcher vessels and 15 pot catcher processors. Under the Council's preferred alternative for Amendment 67, the eligible pot fleet is estimated to be further reduced to 47 catcher vessels ≥60' and 6 eligible catcher processors, reductions of 61% and 60%, respectively. This means that substantially fewer pot vessels will be eligible to fish the 18.3% of the fixed gear Pacific cod TAC allocated to the pot sector upon implementation of Amendment 67. Because relatively few vessels harvested the majority of the cod catch in both sectors during this period, the distribution between pot catcher processor and pot catcher vessel harvests is expected to be fairly stable under this action. Amendment 67 was approved by the Secretary in November 2001 and implementing regulations should be in place by the 2003 fishing season.

2.2.2 Catch History in the BSAI Pacific Cod Target Fishery using Pot Gear

Baseline information on the pot gear Pacific cod fishery from 1995-2001 is presented in Table 2.2 (note that 2001 is considered preliminary data). Identification of targeted Pacific cod harvests was done on a fish ticket basis.[3]

[2] Previous estimates under Amendment 67 showed that only five LLP qualified pot catcher processors would potentially qualify for a BSAI Pacific cod endorsement.

[3] If BSAI Pacific cod harvest represented 50% or more of the commercial (retained) harvest on a given fish ticket, then Pacific cod was deemed to be the target. A sensitivity test was done using the date of the landing, rather than the fish ticket, as the basis for determining the target, which had only a small impact on the results. The non-targeted BSAI Pacific cod harvests were also examined, resulting in three pot vessels in 1995-1999 with BSAI Pacific cod deliveries where none of the cod harvested appeared to be targeted. One vessel's cod harvest represented bait deliveries taken while fishing sablefish; another vessel's cod harvest was overshadowed by its cod deliveries in the Gulf of Alaska, and the third vessel appeared to be targeting Greenland turbot.

Table 2.2 shows the number of unique vessels that participated in the Pacific cod fishery using pot gear and the amount of catch they accounted for by vessel type. All catch from the pot gear share of the Pacific cod TAC as well any reallocated quota[4] is included. Recall that this amendment package uses the catch distribution in the years 1995-99 to determine how to split the pot gear share of the hook-and-line and pot gear BSAI Pacific cod TAC among pot catcher vessels and catcher processors. Thus, the range of years used for determining the split does not reflect the actions proposed in recent amendments that would further limit the number of participants in the Pacific cod fishery (Am. 67) or establish the fixed gear allocations (Am. 64). The hook-and-line and pot gear allocations were in place in 2000, and the cod endorsements will be effective on January 1, 2003. Catch and participation data for 2000 and 2001 were provided in Table 2.2, however, for baseline comparison purposes.

Table 2.2: Catch of BSAI Pacific cod in the directed cod fishery by pot vessels, 1995 - 2001 (in mt)

Year	Length	Catcher Processors			Catcher Vessels			Pot Gear Total	
		Catch	#	%	Catch	#	%	#	Catch
1995	<60'	*	1		412	16		17	*
	60'+	*	6		16,008	103		109	*
95 Total		4,560	7	21.7%	16,420	119	78.3%	126	20,980
1996	<60'		-		86	4		4	86
	60'+	8,266	11		23,375	91		102	31,641
96 Total		8,266	11	26.1%	23,461	95	73.9%	106	31,727
1997	<60'		-		*	3		3	*
	60'+	5,015	9		*	77		86	*
97 Total		5,015	9	22.7%	17,086	80	77.3%	89	22,101
1998	<60'		-		*	3		3	*
	60'+	3,546	7		*	70		77	*
98 Total		3,546	7	28.0%	9,098	73	72.0%	80	12,644
1999	<60'		-		38	4		4	38
	60'+	3,131	13		11,761	88		101	14,892
99 Total		3,131	13	21.0%	11,799	92	79.0%	105	14,930
2000	<60'		-		*	2		2	*
	60'+	2,607	9		*	110		119	*
00 Total		2,607	9	13.1%	17,356	112	86.9%	121	19,963
2001	<60'		-		581	5		5	581
	60'+	3,063	6		14,182	69		75	17,245
01 Total		3,063	6	17.2%	14,763	74	82.8%	80	17,826

Source: ADF&G fishtickets and NMFS blend data, 1995 - 2001. Data for 2001 is preliminary.

*excludes confidential landings or data that would yield confidential landings by simple subtraction.

The table shows that pot catcher vessels harvested 72 - 87 percent of the pot share of the hook-and-line and pot gear TAC each year during 1995 - 2001 and pot catcher processors harvested 13 - 28%. (The pot share of the hook-and-line and pot gear share of the Pacific cod BSAI TAC is 18.3%, effective in 2000.) Pot catcher vessels <60' harvested a very small percentage of the total pot cod catch–less than 2 percent (and less than

[4]The portion of the TAC that was allocated to the trawl or jig sectors of the Pacific cod fishery at the beginning of the year, but reallocated to the fixed gear sector in September because it would not have been harvested otherwise. Typically, the trawl sector would not have harvested their entire allocation because they reached their halibut bycatch cap, and the jig sector because they had insufficient effort to harvest their 2 percent of the BSAI TAC.

600 mt) annually–during this time period. The <60' vessels never harvested more than several hundred metric tons in any one year.

The percentage of total pot catch harvested by catcher vessels was greatest in 2000 (87%) and 2001 (83%). Pot catcher vessels generally tend to enter the Pacific cod fishery after the opilio crab fishery closes in the BSAI. The number of catcher vessels that have participated in the directed cod fishery has varied from a high of 119 in 1995 to a low of 73 in 1998. The average number of catcher vessels participating during the seven year time period (1995-2001) is 92. Participation in the cod fishery by pot vessels likely increased between 1993 and 1995 because of a substantial drop in opilio catch. The opilio fleet harvested about 231 million pounds of opilio in 1993 and only 75 million pounds in 1995. In 1993 the opilio fishery lasted approximately two months. In 1995, the fishery was only about one month long. This provided pot vessels a longer fishing window in the cod fishery. It should be noted that while the catch of opilio in 1995 was only one-third of the catch in 1993, the revenue generated by the fleet from opilio was actual greater in 1995 because of increased prices (NPFMC 1998a)[5]. About the same number of vessels fished both years (254 in 1993 and 253 in 1995).

The 2000 opilio fishery was delayed because of a more southerly ice edge in the Bering Sea. The fishery started at noon on April 1st and was closed at noon on April 8th, with a GHL of 28.5 million pounds. ADF&G reports show that the commercial open access fishery harvested about 31 million pounds (ADF&G 2000). This change in starting date and limited season length enabled the crab fleet to fish cod prior to fishing opilio. This may have contributed to the slightly greater effort in the BSAI cod fishery from the pot catcher vessel sector in 2000. The 2001 and 2002 opilio fisheries returned to the normal January 15 opening with GHLs of 25.3 million pounds and 28.5 million pounds, respectively.

Table 2.3: Catch of BSAI Pacific cod in the directed cod fishery by pot vessels, 1995 - 1999 (in mt, excluding quota reallocated from other gear sectors)

Year	Length	Catcher Processors			Catcher Vessels			Pot Gear Total	
		Catch	#	%	Catch	#	%	#	Catch
1995	<60'	*	1		404	14		15	*
	60'+	*	6		14,594	92		98	*
95 Total		4,555	7	23.3%	14,998	106	76.7%	113	19,553
1996	<60'		-		85	4		4	85
	60'+	8,112	11		22,752	87		98	30,864
96 Total		8,112	11	26.2%	22,837	91	73.8%	102	30,949
1997	<60'		-		*	3		3	*
	60'+	4,986	9		*	73		82	*
97 Total		4,986	9	22.6%	17,058	76	77.4%	85	22,044
1998	<60'		-		*	3		3	*
	60'+	3,508	7		*	70		77	*
98 Total		3,508	7	27.8%	9,098	73	72.2%	80	12,606
1999	<60'		-		38	4		4	38
	60'+	3,070	13		11,533	88		101	14,603
99 Total		3,070	13	21.0%	11,571	92	79.0%	105	14,641

Source: ADF&G fishtickets and NMFS blend data, 1995 - 1999.

*excludes confidential landings or data that would yield confidential landings by simple subtraction.

[5]NPFMC. 1998a. Stock Assessment and Fishery Evaluation Report for the King and Tanner Crab Fisheries of the Bering Sea and Aleutian Islands Regions. Anchorage, AK.

Table 2.3 summarizes the pot gear Pacific cod harvests in 1995-1999, excluding any quota that was reallocated (rolled over) each year from the jig and trawl sectors. The data for the catcher processor sector was derived from NMFS blend data, and the catcher vessel data was derived from ADF&G fishtickets. The data in Table 2.3 will be used to calculate the allocation percentages (excluding roll-overs) of the options proposed by the Council in Section 3.0. Table 2.3 shows that during 1995-1999, the pot catcher vessel sector harvested 72 - 79% of the total pot sector catch excluding reallocated quota and the pot catcher processor sector harvested the remaining 21 - 28%.

BSAI Cod Harvests Using Jig Gear

Amendment 24 to the BSAI FMP established a 2 percent allocation of Pacific cod to vessels using jig gear. That allocation has been in place over the entire 1995-99 time period, and has provided jig vessels the opportunity to harvest Pacific cod during much of the year. Even with the extended seasons, the jig fleet has never harvested their entire 2 percent cod allocation for a variety of reasons, including weather and profitability of the fishery. If the jig fishery is not projected to take its entire allocation, some of the quota is typically reallocated to the fixed gear sector later in the year. In recent years, the number of jig vessels participating in the cod fishery has declined from a high of 45 in 1995 to 10 vessels in 1998. These vessels have generally been less than 60' in length. The total amount of cod caught with jig gear was smallest in 2001 (71 mt), and this fleet has not harvested more than 200 mt since 1996. This information has been included to show that roll-overs from the jig sector to the pot sector will likely continue in the future.

2.2.3 Distribution of Catch Within Each Pot Sector

Pot Catcher processors

Four of the 19 pot catcher processors participating in 1995-99 harvested about 68 percent of that sector's total BSAI cod harvest in that time period. Ten of the pot catcher processors harvested over 90 percent of the total. The remaining nine vessels accounted for only 10 percent of the sector's total catch from 1995-99. Six of those 19 catcher processors are estimated to qualify under the proposed recency requirements in Amendment 67.

Pot Catcher Vessels

Relatively few of the pot catcher vessels accounted for a majority of the fixed gear Pacific cod harvest from 1995-99. During that time period a total of 203 unique vessels reported cod harvests. Six of the 203 vessels accounted for 25 percent of the catch, 17 vessels (50 percent), 38 vessels (75 percent), and 69 vessels (90 percent). The remaining 10 percent of the cod harvest in this sector was taken by the other 134 vessels. This distribution should not be unexpected. In many fisheries a few "core" boats account for much of the harvest.

Forty-seven catcher vessels ≥60' are estimated to qualify under the recency requirements adopted by the Council in Amendment 67. Amendment 67 does not require catcher vessels <60' to have a cod endorsement; this sector needs only an LLP license to prosecute the BSAI fixed gear Pacific cod fishery. Over the period 1995-1999, only 16 pot vessels <60' participated in the BSAI cod fishery.

2.2.4 Vessel Participation Patterns in the BSAI Pacific Cod Fishery

In addition to the number of vessels and their aggregate total catch, information on participation patterns is important to consider. Tables which represent each vessel's participation history in 1995-99 are included in Tables 2.4 and 2.5. These years represent the time period in the options under consideration.

Shaded cells in the tables represent participation in that year (although the tables do not provide any information on the level of effort in the year they fished or whether the vessels are LLP qualified). The column on the right side of the table reports the number of vessels that are represented by that participation pattern. The column on the left side of the table is simply a sum of the years that the vessels participated in the Pacific cod fishery between 1995-99. So, if a vessel fished in all five years the 'Years Fished' column would report 5.

Table 2.4: Participation History of Pot Catcher Processors in the BSAI Cod Fishery, 1995-99

Years Fished	1995	1996	1997	1998	1999	Vessels
1						3
1						0
1						1
1						3
1						1
2						1
2						1
2						1
2						1
3						1
3						1
4						1
5						4
Total Vessels	7	10	9	7	13	19

Source: NMFS AKR Blend data, 1995-99.

Two important issues were considered by the Council that affected Pacific cod vessels during this time period. The first was LLP. Qualifying years for LLP area endorsements were January 1, 1992, through June 17, 1995. The second issue was the Pacific cod TAC split among fixed and trawl gear vessels, which was scheduled to sunset on December 31, 1996. The Council made a final decision on that amendment package during the June 1996 meeting. These two issues may have provided motivation for vessels to fish in a manner that they might not have otherwise. However, it is not possible to determine exactly how participation patterns were influenced by these amendments. It is obvious that during the last year for LLP endorsement qualification, a large number of vessels fishing in just one year participated. This trend is consistent across all the fixed gear vessel sectors.

The total number of pot catcher processor vessels participating in the BSAI cod fishery has been fairly stable over the 1995-99 time period, as shown in Table 2.4. However, while the total number of vessels fishing in a year has been consistent, the boats that participate have not been as stable. Only seven of the 20 pot catcher processors participating over the time period fished in at least three of the five years. The remaining 13 vessels fished two years or less, and three of the vessels fished only in 1999.

A total of 203 pot catcher vessels participated in the BSAI Pacific cod fishery from 1995-99 (Table 2.5). Almost half of these vessels (91) fished in only one year, and 40 vessels fished only in 1995. Forty vessels fished in two years, 22 vessels fished in three years, 28 fished four years, and 22 fished all five years. Therefore, only about 25 percent of the vessels fished more than three of five years.

Table 2.5: Participation History of the Pot Catcher Vessel Fleet in the BSAI cod fishery, 1995-99

Years Fished	1995	1996	1997	1998	1999	Vessels
1						20
1						12
1						4
1						15
1						40
2						6
2						4
2						3
2						2
2						2
2						2
2						5
2						6
2						10
3						3
3						2
3						6
3						3
3						2
3						1
3						5
4						7
4						4
4						5
4						7
4						5
5						22
Total Vessels	119	95	80	73	92	203

Source: ADF&G Fishticket data, 1995-99

2.2.5 Ex-vessel Prices and Revenue

Ex-vessel BSAI Pacific cod prices for the fixed gear sector ranged between $0.249 and $0.342 per pound over the period 1993 through 1997 (Greig 1998). The highest price was reported in 1997. During this time period the prices paid to pot and hook-and-line vessels were similar. Some years pot catcher vessels received slightly more revenue per pound than vessels using hook-and-line gear. Other years the hook-and-line vessels were paid a slightly higher price.

For 1998, fishticket data were used to estimate ex-vessel prices for BSAI shorebased deliveries. Prices for pot and hook-and-line catcher vessels were estimated separately. The following steps were used to estimate ex-vessel prices from fishtickets:

1. Only deliveries of BSAI caught Pacific cod in an open access fishery were selected.
2. Delivery codes for processed products and discards were deleted.
3. Fishtickets that did not include value information were deleted.
4. The records that remained were then divided into gear types.
5. Records that did not fall within two standard deviations of the mean price were deleted.
6. A weighted average price for the remaining records was then calculated for each gear type.

This method of estimating ex-vessel prices yielded $0.192 per pound for pot gear (2,000 observations) and $0.193 per pound for hook-and-line (60 observations). The revenue estimates in this section are based on observed prices in the most recent year for which data are available. This method of estimation fails to account for any change in price arising from changes in supplies or demands. Data are unavailable concerning world markets into which harvests from the relevant fisheries are sold preventing more accurate price estimation. Failure to use an economic structure to estimate prices could result in some inaccuracy in estimated prices. These prices are weighted averages based on the population of deliveries for which reasonable values were reported, and not a sample, so no tests of statistical significance were performed. The distribution of prices were negatively skewed for both gear types, with the pot deliveries also exhibiting bi-modality. The bi-modal distribution resulted from geographic regions paying different prices; differences which cannot be reported because of confidentiality regulations.

Anomalously low prices ranging far from the mean of an otherwise tightly bounded distribution accounted for the wide dispersion and skewness. Deletion of these records which did not fall within two standard deviations of the mean included deliveries with calculated prices of less than $0.08/lb for pot vessels. These prices could not reasonably be expected to sustain a directed fishery for Pacific cod. These prices may have resulted from bycatch landings of Pacific cod in other fixed gear fisheries such as the sablefish and halibut IFQ fisheries. While the upper tails of the distributions for both gear types contained data that was also dropped as a consequence of selecting two standard deviations for an acceptance rate, these records were very few relative to the observations for each distribution (ten records for the pot vessel data). For each gear type, these upper values occurred to the right of natural break points in the distribution, suggesting that these sales of Pacific cod were not representative of those clustered closely around the mean. Perhaps these landings sold at a premium due to the inclusion of other more valuable species in the delivery or perhaps these records were coded erroneously. Had all records been included for ex-vessel price computation, a mean of $0.187 and median of $0.196 would have resulted for pot vessels, whose mean and median prices after outlier exclusion were $0.191 and $0.196, respectively.

In 2000, the ex-vessel price of BSAI cod harvested with fixed gear and delivered shoreside was reported to be about $0.30, based on the 2001 SAFE document. A slightly lower estimate of $0.27 was estimated for 1999 fixed gear cod deliveries. The 1999 and 2000 estimated fixed gear price is about 50 percent higher than was estimated from 1998 fishtickets for pot cod. Fillet prices for pollock also increased about 74 percent

between 1998 and 1999 (GAO 1999). The increases were likely due to several factors including tighter worldwide groundfish supplies and stronger demand. A stronger yen relative to the dollar has also likely increased prices. These same factors influencing pollock prices also affect the cod markets, so it is not surprising to see similar changes in cod prices over this time period.

Ex-vessel prices from 1998 will be used in Section 3.0 to generate estimates of the distributional impacts the alternatives will have on pot vessels. General information on 1999 and 2000 prices is included here to provide the reader a sense of current market conditions. However, because these data only report preliminary price estimates for the fixed gear sector as a whole and do not differentiate pot and hook-and-line vessels, they will not be used to project gross ex-vessel revenues in this analysis. The most current year of available data (1998) will be used to make those projections, recognizing that prices were lower in 1998 than they were in 1999 or 2000. However, for comparison among the options under consideration, the value used for ex-vessel prices remains constant; therefore, the relative difference among the options would not change by using a different ex-vessel price.

2.2.6 Products Produced from Pacific Cod

Once groundfish are harvested they must be processed. The types of product produced depend on the production facilities' capabilities and the demand for specific products in the market. This section will focus on primary processing. Fish that have been processed once and are then reprocessed will not be included. Including only fish that are processed the first time will eliminate double counting problems which may arise if secondary processing was also counted. A second reason for including only primary processing is the lack of data available on secondary processing.

Production information has been compiled for the years 1992-99. These data were derived from Weekly Production Reports (WPR) submitted to NMFS AKR by all Federally managed processors. WPR's collect data on the tons of each product form that were produced by a processor. Product forms reported in the WPR data have been aggregated in this analysis. A summary table of the original product forms and those used in this analysis, listed in the aggregation columns, are included in Table 2.6.

Table 2.6: List of Product Forms Included in the Analysis

WPR Code	Aggregation	WPR Code	Aggregation	WPR Code	Aggregation
01-Whole/food	Whole	17-Cheeks/chins (<90)	Other	34-Milt	Other
02-Whole/bait	Bait	18-Chins (90+)	Other	35-Stomachs	Other
03-Bled	Bled	19-Belly flaps (meat)	Other	37-Split - no backbone	Other
04-Gutted only	Gutted	20-Fillets w/skin & ribs	Fillets	39-Bones	Other
06-H&G w/roe	H&G	21-Fillets w/skin-no ribs	Fillets	92-Whole	Whole
07-H&G western	H&G	22-Fillet w/ribs no skin	Fillets	95-Personal use- not sold	Other
08-H&G eastern	H&G	23-Fillets - no skin/ribs	Fillets	96-Previously caught	Disc
10-H&G, tail removed	H&G	24-Fillet - deep skin	Fillets	97-Other	Other
12-Salt & split	Salt & Split	30-Surimi	Surimi	98-Discarded at sea	Disc
14-Roe	Roe	31-Minced fish	Minced	99-Discarded landed	Disc
15-Pectoral girdle only	Other	32-Fish meal	Meal		
16-Heads	Other	33-Fish oil	Other		

Tables 2.7 and 2.8 report the annual production by processors using Pacific cod harvested in the directed BSAI pot gear fishery. In addition to Pacific cod harvested in the directed fixed gear fishery, the tables show products made from all other groundfish species and fisheries for which these processors have operated, except for IFQ halibut. The first set of tables shows the amount of each product produced from various species. Within those tables are the Pacific cod products. Variations in the products produced by the different

sectors can then be compared using information from the tables. This information portrays the role that Pacific cod harvested by pot gear plays in terms of overall processed product, as well as helps to illustrate changes in product mix that may result from adjusting the allocations to the different sectors. The action under consideration in this amendment only addresses splitting the allocation to pot catcher processors and pot catcher vessels. Because the intent is to freeze the allocation between the pot sectors at historical levels, we would not expect the product mix to change significantly under any option being considered.

Pot catcher processors have consistently produced Pacific cod in excess of 99 percent of their total groundfish product. Much like processors using hook-and-line gear, pot catcher processors favor head and gut processing, although salted and split Pacific cod has accounted for as much as 15 percent of total product form in some years.

Shoreside processors purchase Pacific cod from the fixed, trawl, and jig gear and other sectors. However, the resulting products cannot be tracked back to the amounts of unprocessed fish landed by each gear type, thus making it difficult to portray the exact role that Pacific cod harvested by pot catcher vessels plays in terms of overall processed product. Since 1992, when Pacific cod accounted for about 6% of total groundfish product to shore plants, this ratio grew to 16% in 1996, and then tapered off to 13% by 1998. Pollock have dominated processing output in terms of volume with an average of almost 112,000 mt for the seven year period, followed by Pacific cod with an average of 14,000 mt.

Table 2.7: Production by product form by pot catcher processors (in metric tons), 1992-99

Species	Products	Year							
		92	93	94	95	96	97	98	99
Atka mackerel	Other					1			0
Atka mackerel Total						1			0
Flatfish	Whole							8	10
Flatfish Total								8	10
Other	Bait	10							1
	Gutted	24							2
	Whole								3
	(blank)	3							
Other Total		37							6
Pacific cod	Bait	58		34		5	14		1
	Fillets	6							
	Gutted	15							
	H&G	3,836	288	726	1,347	3,160	2,304	1,337	1,489
	Minced								
	Other	28				127	3	1	6
	Salt & Split			61	155	625	144	113	18
	Whole							1	7
Pacific cod Total		3,943	288	821	1,502	3,917	2,465	1,450	1,521
Grand Total		3,981	288	821	1,502	3,918	2,465	1,458	1,540

Table 2.8: Production by product form by plants taking catcher vessel deliveries from fixed gear vessels (in metric tons), 1992-99

Species	Products	Year							
		92	93	94	95	96	97	98	99
Atka mackerel	Meal	2	0	1	1	2	0		0

	Other	20							
Atka mackerel Total		21	0	1	1	2	0		0
Flatfish	Bait	0							2
	Fillets	77			0	0			
	H&G	29		0	7	108	116		
	Meal	232	10	211	402	282	1,042	170	184
	Other	9	0	137	158	16	261	15	47
	Surimi	305		484	532	6	1,525		176
	Whole			1,490	3,865	3,574	3,865		
Flatfish Total		652	10	2,322	4,965	3,986	6,809	185	410
Greenland Turbot	Bled				0				
	Fillets				1				
	H&G	37	349	575	572	153	71	294	91
	Meal	3	0	16	51	0	0	2	
	Other	1		3	17				
	Whole						0	2	4
Greenland Turbot Total		41	349	594	641	154	71	298	96
Other	Bait	16			1				
	Gutted				4				20
	Meal	1	2	6	15	4	36	11	9
	Other	0					0	2	
	Whole		2	5	1		4		2
Other Total		17	4	11	21	4	41	13	31
Pacific cod	Bait	185	738	469	905	699	443	1,562	806
	Bled	93	1	248	338	67	63	2	488
	Fillets	1,040	2,645	2,538	4,363	5,418	6,287	4,871	5,318
	Gutted	10							
	H&G	607	757	2,666	2,032	1,384	132	595	943
	Meal	816	1,720	1,808	3,013	2,808	3,109	2,273	2,511
	Minced	138	529	373	446	29	24	50	
	Other	190	162	395	1,145	1,670	1,162	634	1,648
	Roe	33	11	84	322	424	638	474	415
	Salt & Split	2,995	2,225	4,101	6,617	8,259	4,253	3,438	3,640
	Surimi	177		10	370	160	354	381	229
	Whole	130	6	160	265	733	376	127	1
Pacific cod Total		6,414	8,795	12,852	19,816	21,653	16,842	14,407	16,018

Table 2.8 continued									
Pollock	Bait		16	32	22	3		75	68
	Fillets	1,877	4,906	1,065	3,377	5,199	4,361	5,718	17,438
	H&G							93	471
	Meal	26,764	27,369	28,138	26,219	22,868	24,595	23,949	33,656
	Minced		266	30	138	67	90	34	2,857
	Other	7,129	9,793	11,069	13,486	12,381	11,273	11,575	15,166
	Roe	4,298	1,377	2,551	3,668	3,379	4,127	2,440	3,898
	Salt & Split							933	265
	Surimi	62,585	66,292	77,421	73,172	68,586	65,155	62,666	78,204
	Whole	172		41		6	20	24	17
Pollock Total		102,825	110,019	120,345	120,082	112,488	109,620	107,507	152,040
Rockfish	Bait				0				
	Gutted	0							
	H&G	34	29	23	75	25	23	19	20
	Meal	1	0	2	15	14	24		
	Other	0			0			2	
	Whole	3		3	1	22	92	189	7
Rockfish Total		38	29	29	92	61	140	210	29
Sablefish	H&G	410	248	253	607	304	387	272	299
	Meal	1	0	1	4		0	5	
	Other	0		2	1				5
	Whole	7					0		4
Sablefish Total		418	248	255	611	304	388	277	308
Grand Total		110,427	119,454	136,410	146,230	138,651	133,910	122,897	169,118

Source: NMFS Weekly Production Report Data, 1992-99

2.2.7 Ex-processor Revenue (First Wholesale)

The amount paid to the first processors of fish for their product is first wholesale revenue. This section of the analysis will use 1998 production patterns and prices to estimate the first wholesale value of a metric ton of round Pacific cod to each pot sector. While this amendment only addresses the pot vessel sector, the other fixed gear sectors are included in some of the tables for comparison purposes.

Data from the 1998 COAR reports were used to estimate first wholesale price by product form and gear type where possible. NMFS Weekly Production Reports were used to estimate production. Because both data sets report similar product forms, few adjustments were needed to match product forms to prices. Currently the COAR data set cannot be used to estimate product mix, because not all of the processors are required to submit COAR reports. They were not required to do so in 1998, but will be in future years because of a regulation change in 1999. Table 2.9 reports the pounds and a calculated first wholesale price by product form and sector derived from the COAR. Pounds were reported to provide the reader a reference point showing the amount of product used to generate the price. The amount of product in the inshore sector is

large relative to the amount of fixed gear Pacific cod they processed. This is because product forms cannot be broken out by gear used to harvest the fish. Lumping all gear types in this calculation may underestimate the price of inshore fixed gear products. The price differences masked by including all gear types would likely have been due to the relative freshness and high quality of the raw fish delivered to the processor by fixed gear vessels.

Table 2.9: First wholesale pounds and prices by product form and processing sector, 1998

	Inshore/MS		Pot CP		Freezer Longliner	
Product	Pounds	$/Lb.	Pounds	$/Lb.	Pounds	$/Lb.
Belly flaps (meat)	64,766	$0.70	-	-	-	-
Bled	-	$0.77	-	-	-	-
Bones	4,000	$0.07	-	-	-	-
Fillets with skin-no ribs	208,918	$1.86	-	-	-	-
Fillets-no skin or ribs	15,290,541	$1.70	-	-	-	$1.70
Fish meal	1,661,632	$0.30	-	-	-	-
Fish oil	196,363	$0.23	-	-	-	-
Headed & gutted, eastern cut	-	$0.81	289,569	$0.89	26,751,396	$0.91
Headed & gutted, western cut	245,139	$0.86	1,200,397	$0.95	8,065,595	$1.03
H&G, tail removed	-	$0.86	-	-	-	-
Milt	16,442	$1.24	-	-	-	$1.24
Minced fish	49,802	$0.25	-	-	-	$0.25
Other-specify	65,250	$1.58	-	-	-	$1.58
Pectoral girdle only	212,415	$0.75	-	-	-	-
Roe only	91,419	$0.74	-	-	160,690	$0.75
Salted & split	6,590,911	$1.23	274,065	$1.80	-	-
Stomachs (internal organs)	324	$0.86	-	-	371,435	$0.69
Surimi	1,938,693	$0.53	-	-	-	-
Whole bait	1,014,815	$0.35	-	-	25,355	$0.48
Whole fish/food fish	169,012	$0.75	-	$0.75	-	$0.75

Source: 1998 COAR data

Prices were calculated by dividing the total value by the total pounds. The weighted average price was calculated for each product form reported by a sector. The inshore column includes deliveries by all gear types, because it is not possible to determine the products produced by gear type used to harvest the fish. This same problem arises in weekly production report data. There are also prices reported in the table that have no corresponding poundage. These were product forms that were reported in the WPR data, but not in the COAR for that sector. In most cases a price from another sector was used as a proxy. The hook-and-line catcher processor sector has proxy values for whole fish, other, minced, milt, and fillets taken from the inshore sector. The pot catcher processor sector's whole fish price was taken from the inshore sector. Inshore sector prices for bled fish were estimated by dividing the whole fish price by the product recovery rate (PRR) for bled fish. The inshore H&G eastern cut price was calculated by multiplying the western cut price by the pot catcher processor ratio of eastern cut to western cut prices. Finally, the H&G (tail removed) price inshore was assumed to equal the inshore H&G western cut price.

The product mix information for 1998 is provided in Table 2.10. Information in that table shows that the catcher processors produce mostly H&G products. Shorebased processors receiving deliveries from pot, hook-and-line, and trawl catcher vessels, on the other hand, produce mostly fillets. Caution must be exercised when using the product mix for inshore processors. These plants often take cod deliveries from vessels using

different gear types during the same reporting period. Because processors do not track, or may track but do not report, the flow of fish through a plant by gear type, it is not possible to report production by gear type used to harvest the fish. Trawl gear deliveries have been much larger than fixed gear catcher vessel deliveries. Therefore, the product mix information for catcher vessel deliveries may more closely represent products produced from trawl deliveries than fixed gear.

Table 2.10: Pounds of product produced by sector, 1998

Product	Inshore/MS	Pot C/P	Freezer Longliner
Belly flaps (meat)	497,572	0	0
Bled	5,020	0	0
Bones	404,293	0	0
Fillets - no skin or ribs	11,000,000	0	100,781
Fish meal	5,011,973	0	0
Fish oil	242,252	0	0
H&G eastern	123,799	1,536,871	63,000,000
H&G western	531,298	1,409,917	28,000,000
Headed & gutted, tail removed	657,610	0	0
Milt	170,651	0	432,875
Minced fish	109,577	0	91,229
Other	7,474	0	45,906
Roe	1,043,887	0	1,006,444
Salt&split	7,578,817	249,119	0
Stomachs (internal organs)	75,393	0	1,082,944
Surimi	839,362	0	0
Whole/bait	3,444,493	0	78,925
Whole/food	279,164	1,667	49,348
Grand Total	32,000,000	3,197,111	95,000,000

Source: 1998 Weekly Production Reports.
Note: Processors that did not take deliveries from fixed gear catcher vessels were excluded from the Inshore/MS column. Therefore, the overall production from these sectors are underestimated.

With the first wholesale price, the production by sector, and the product recovery rate, a measure of the first wholesale value per ton of round cod can be estimated. To make that calculation the price and product information are multiplied to generate an estimate of value. Then the product weights are converted to round weight by dividing the pounds of product by the product recovery rate. The values and round weights can then be summed. Once summed, the value can be divided by round weight to generate a weighted average first wholesale price. It should be noted that the product recovery rate used to back-calculate round weight from product output is an average, and is not verified on a firm by firm basis. Thus, the product recovery rate may not reflect variability across processors or through time.

Table 2.11 provides estimates of this calculation in dollars per metric ton, reported in bold print at the bottom of the second part of the table. The results show that inshore deliveries generate about $923, pot catcher processors $1,166, and hook-and-line catcher processors $1,010 per metric ton of round fish. Recall that the inshore values are likely underestimated because they also include trawl deliveries. These values will be used in Section 3.0 to estimate Pacific cod gross revenue at the first wholesale level for the pot catcher vessel sector under the various allocation alternatives being considered by the Council.

Table 2.11: Estimates of 1998 first wholesale value per ton of round cod

Product	Inshore*	Pot C/P	Freezer Longliner	PRR
Belly flaps (meat)	$348,300	$0	$0	
Bled	$3,842	$0	$0	
Bones	$28,300	$0	$0	
Fillets - no skin or ribs	$18,257,067	$0	$171,328	0.25
Fish meal	$1,503,592	$0	$0	
Fish oil	$55,718	$0	$0	
H&G eastern	$99,743	$1,367,815	$57,170,493	0.44
H&G western	$456,916	$1,339,421	$28,483,724	0.57
Headed & gutted, tail removed	$565,545	$0	$0	
Milt	$211,608	$0	$536,766	
Minced fish	$27,394	$0	$22,807	0.5
Other	$11,808	$0	$72,532	0.5
Roe	$772,476	$0	$754,833	
Salt&split	$9,321,945	$448,416	$0	
Stomachs (internal organs)	$64,838	$0	$747,231	
Surimi	$444,862	$0	$0	
Whole/bait	$1,205,573	$0	$37,884	1
Whole/food	$209,373	$1,250	$37,011	1
Grand Total	$33,588,900	$3,156,902	$88,034,609	

Estimated Tons Purchased	36,376	2,707	87,138	
$/Ton	**$ 923**	**$ 1,166**	**$ 1,010**	

* Includes deliveries from all gear types: trawl, pot, and hook-and-line gear. Therefore, the value per ton for hook-and-line and pot gear deliveries is likely underestimated.

2.2.8 Inseason Management Issues

Groundfish TACs, bycatch, and PSC limits are managed inseason by the Alaska Regional Office of NMFS. Fisheries are closed when the fishery is close to reaching its TAC, or when seasonal apportionments of PSC are taken; thus, there are dozens of openings and closures to monitor. Pot vessels have been exempt from the PSC apportionments, thus, this action would not add any new monitoring efforts in that respect. The BSAI pot cod quota is currently apportioned 60% in the first season (Jan. 1 - June 10) and 40% in the second season (Sept. 1 - Dec. 31). Under Amendment 64, Pacific cod bycatch in the fixed gear target fisheries is deducted off the top of the fixed gear Pacific cod apportionment, and the bycatch of cod is not further subdivided among the pot and hook-and-line sectors. Thus, under the action proposed in this amendment, additional monitoring would only be necessary to track two distinct pot quotas.

2.2.9 Effect of 2002 Steller Sea Lion Measures on Pacific Cod Pot Fishery

NMFS has completed a Final Supplemental Environmental Impact Statement on Steller sea lion protection measures (November 2001), which includes the agency and Council's preferred alternative ("Area and Fishery Specific Approach"). This alternative was developed by the Council's RPA Committee and adjusted by the Council at its September and October 2001 meetings and was put into place in 2002. On October 19, 2001, NMFS released a biological opinion which concluded that the area and fishery-specific approach would not be likely to jeopardize the continuing existence of the Steller sea lion nor adversely modify its critical habitat. This approach allows for different types of management measures in the Aleutians, Bering Sea, and Gulf of Alaska. Essential measures include fishery specific closed areas around rookeries and haulouts and

season and gear apportionments. The specific measures applicable to the BSAI pot cod fisheries are as follows (see the SSL Final SEIS for details):

Seasonal and TAC apportionments:	Jan. 1 - June 10 (60%), Sept. 1 - Dec. 31 (40%) Pot catcher vessels <60' do not have seasonal apportionment.
Pacific cod rollover in the BSAI:	Unharvested cod TAC can be rolled over from one season to the next.
Area restrictions:	Aleutian Islands - No fishing in critical habitat east of 173 West to western boundary of Area 9, 0-10 nm closures at Buldir, 0-20 nm closure at Agligadak. Bering Sea - 0-3 nm closures around all rookeries and haulouts. 0-7 nm closure around Amak rookeries.

Given that the above management measures have been recently implemented, it is important to consider whether the restrictions placed on the BSAI pot cod fishery in 2002 would affect whether either pot sector would be prevented from harvesting a direct cod allocation should Amendment 68 be approved. It is also important to consider, in light of these new restrictions, whether the cumulative impact of the proposed action to split the pot cod TAC would impact either pot sector distinct from the other. Table 2.12 shows that the measures under the preferred alternative chosen by the Council (Alternative 4 in the SSL SEIS), close areas from which 9% of the total cod harvests were taken by pot catcher processors in 1999 and areas in which 13.6% of the total cod harvests were taken by pot catcher vessels. In addition, these measures temporally disperse the fishing in the open areas: 60% in the A season (Jan. 1 - June 10) and 40% in the B season (Sept. 1 - Dec. 31). While seasonal apportionments were not yet in place, pot catcher processors and catcher vessels harvested approximately 73% and 84% of their total cod catch before June 10 in 1999.
The concern regarding this action, noted during development of the Steller sea lion SEIS, is that management measures taken to protect the Steller sea lion may be more restrictive to catcher vessels (that are limited to fishing closer to shore) than to the larger catcher processors. If the Steller sea lion measures shifted the location of the pot cod fishery significantly farther offshore, there was a concern that, due to safety issues, the catcher vessel fleet would either take longer to, or not be capable of, harvesting its entire allocation under

Table 2.12: Percent of 1999 directed BSAI pot cod catch taken inside and outside the areas restricted under the SSL measures (2001)

Season	**Pot catcher/processors**		**Pot catcher vessels**	
	% In	% Out	% In	% Out
A season	8.1	91.9	12.8	87.2
B season	10.7	89.3	17.6	82.4
Total	8.8	91.2	13.6	86.4

Source: NMFS, Dave Ackley and SSL SEIS 2001.

Note: Pot cps and cvs harvested 72.7% and 83.8% of their total 1999 catch in the A season, respectively.

the options for consideration in this amendment. Changes in fishery management regulations that result in vessels, particularly smaller vessels, operating farther offshore, appear likely to increase the risk of property loss, injury to crew members, and loss of life. Steller sea lion regulations that close, or severely restrict, fishing in nearshore critical habitat to operations targeting cod could compel vessel operators to choose

between assuming these increased risks or exiting these fisheries for some or all of the fishing season (NMFS 2001c).

In the case of very restrictive management measures, it may benefit smaller pot catcher vessels to have their own distinct allocation, so that they are not competing for a general pot allocation with catcher processors who can spend a longer time at sea without going to port. A separate allocation would allow catcher vessels a longer window of opportunity to harvest the cod, reducing the pressure to squeeze a longer trip into marginal weather conditions in order to harvest the same amount of cod as previous years.

However, Table 2.12 shows that in 1999, the majority of both the pot catcher processor and pot catcher vessel harvest was taken *outside* of the restricted areas for Steller sea lion protection that were implemented under the RPA. About 9% of the pot catcher processor harvest and 14% of the catcher vessel harvest in 1999 were taken in areas that are now restricted in 2002, a difference of about 5%. Thus, even though pot catcher vessels harvested slightly more of their total catch closer to shore and in Steller sea lion critical habitat areas than pot catcher processors, the difference is fairly modest. Given this information, it is assumed that the Steller sea lion measures are not unduly restrictive to pot catcher vessels; it appears they would be able to continue competing with pot catcher processors for the cod TAC should the Council choose to take no action (Alternative 1). In addition, both pot sectors take the majority of their catch in the A season, which will now be limited to 60% of the pot cod TAC. This brief review also suggests that the sea lion management measures would not cause the pot catcher vessel sector to have substantial difficulty harvesting a distinct allocation should the Council select Alternative 2.

3.0 IMPACTS OF THE ALTERNATIVES

Sections 3.0 and 4.0 provide information regarding the impacts of the alternatives including identification of the individuals or groups that may be affected by the action, the nature of these impacts, quantification of the economic impacts if possible, and discussion of the trade-offs between qualitative and quantitative benefits and costs. These sections are intended to jointly satisfy the requirements of NEPA, Executive Order 12866 and the Regulatory Flexibility Act.

The environmental and economic impacts of the proposed action are summarized in Sections 3.1 and 3.2, respectively. The requirements of NEPA with respect to environmental impacts on the human environment are described at the beginning of Section 2.0. The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following statement from the order:

> In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environment, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

This section addresses the requirements of both E.O. 12866 and the Regulatory Flexibility Act (RFA) to provide adequate information to determine whether an action is "significant" under E.O. 12866 or will result in "significant" adverse impacts on small entities under the RFA. The RFA requires analysis of impacts on small businesses, non-profit organizations, or governmental jurisdictions which may result from regulations being proposed. The requirements of the RFA are outlined in Section 4.3.

E. O. 12866 requires that the Office of Management and Budget review proposed regulatory programs that are considered to be "significant." A "significant regulatory action" is one that is likely to:

> (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
>
> (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
>
> (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
>
> (4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

3.1 Environmental Impacts of the Alternatives

The environmental impacts generally associated with fishery management actions are effects resulting from (1) harvest of fish stocks which may result in changes in food availability to predators and scavengers, changes in the population structure of target fish stocks, and changes in the marine ecosystem community structure; (2) changes in the physical and biological structure of the marine environment as a result of fishing practices, e.g., effects of gear use and fish processing discards; and (3) entanglement/entrapment of non-target organisms in active or inactive fishing gear. A summary of the effects of the annual groundfish harvests on the biological environment and associated impacts on marine mammals, seabirds, and other threatened or endangered species are discussed in the final environmental assessment for the annual groundfish total allowable catch specifications.

The alternatives in this analysis address resource allocation issues in the BSAI pot cod fishery: whether or not to allocate distinct quotas to pot catcher processors and pot catcher vessels. All of the alternatives would result in an allocation that is consistent with the historical distribution among those sectors during 1995-1999, thus, the alternatives will not change the commercial quotas for BSAI cod, the amount of cod available to the pot sector, the timing or general location of the fishery, or the manner in which the fish are harvested. Thus, overall, while the action would allow pot catcher vessels and pot catcher processors to be fishing separate quotas, the fishery would be operating in the same manner and both sectors would be subject to the same regulations currently in place. Thus, no significant interactions between the proposed action and the environment were identified in the analysis.

To determine the significance of impacts of the actions analyzed in this EA, NMFS is also required by NEPA and 50 CFR 1508.27 to consider both the *context* and the *intensity* of the action. These requirements are discussed in Section 4.1.

3.1.1 Impacts on the Pacific Cod Stock

No changes to the total TAC of Pacific cod are proposed by this amendment. The amendment would further allocate the portion of the fixed gear Pacific cod TAC allocated to pot vessels among the pot catcher processor and pot catcher vessel sectors. The apportionment will reflect the recent harvest distribution of the separate sectors. Any Pacific cod harvested must be landed under IR/IU regulations (there are a few narrowly defined exceptions). The Pacific cod TAC will not be affected, and neither should the general distribution between pot sectors; the intent of this proposed amendment is to prevent significant increase or change in the harvest shares of the pot gear sectors by establishing allocations that closely approximate recent catch histories. The proposed amendment, therefore, would serve to prevent changes in effort within the different pot gear sectors.

3.1.2 Impacts on Other Groundfish and Crab Stocks

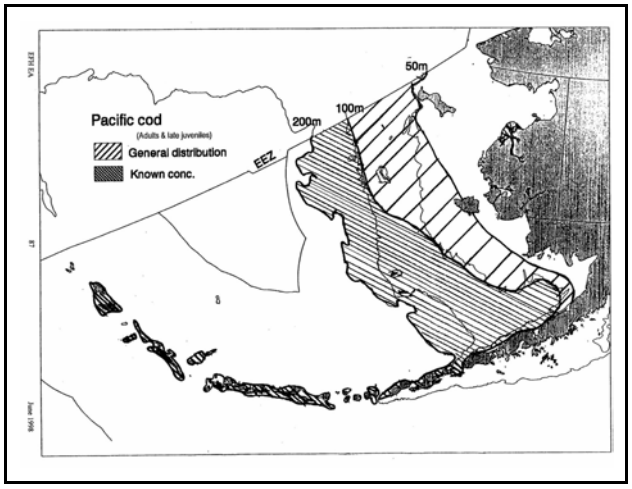
The primary bycatch of prohibited species taken in the pot cod fishery is crab. Because the proposed action does not affect the allocation of BSAI cod among the gear types in the pot sector as a whole, we would not expect the alternatives to have any impact on the number of species taken incidentally in the directed pot cod fishery. As stated previously, the intent of the amendment is to provide for distinct allocations of cod to pot catcher processors and pot catcher vessels which closely reflect their historical efforts. The cod allocation to vessels fishing with pot gear would not change, thus there is no expected impact on incidental catch of other groundfish or crab species.

3.1.3 Direct Impacts of Pot Gear on Habitat

The pot fishery likely affects habitat during setting and retrieval of pots; however, minimal research quantifying the impacts has been conducted to date. There are also effects related to "ghost fishing" by derelict pots. Lost by the fishery, these pots may continue to entrap animals until their netting disintegrates. If they are unbaited, the primary attraction of derelict pots is their physical structure, which adds complexity and vertical relief to a generally featureless environment. Because none of the alternatives would change the overall pot quota for the Pacific cod fishery, the level of effort from vessels using pot gear to harvest cod will not change as a result of this action. Thus, no additional impacts on habitat are expected under the proposed action.

3.1.4 Assessment of Impacts on Essential Fish Habitat

Section 303(a)(7) of the Magnuson-Stevens Act requires all FMPs to describe and identify essential fish habitat (EFH), which it defines as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." In addition, FMPs must minimize effects on EFH caused by fishing and identify other actions to conserve and enhance EFH.



On January 20, 1999, the Council's five FMPs (BSAI groundfish, GOA groundfish, salmon, crab, and scallops) were amended to incorporate EFH provisions. These provisions include identification and description of EFH including habitat areas of particular concern, identification of research and information needs, and identification of potential adverse effects on EFH due to fishing and non-fishing activities. Additional information on EFH can be found in the EA for Amendments 55/55/8/5/5 (NPFMC 1999 - copies of this document can be obtained from the Council office upon request). The above map shows the location of EFH for adult Pacific cod in the BSAI. The EFH definitions adopted for BSAI Pacific cod life stages are listed in the table below.

The pot gear fisheries for Pacific cod have concentrated along the north side of Unalaska Island, Unimak Island and Unimak pass, with some relatively minor effort along the Aleutian Islands (Fritz et al. 1998). According to the EA for Amendment 56/56 to the BSAI and GOA Groundfish FMPs, the fixed gear Pacific cod fisheries occur within the EFH area used by nearly every groundfish and crab species. Primary overlap would occur with the following species: pollock, flathead sole, dusky rockfish, skates, sculpins, Tanner crab, and snow crab. Insufficient data exist to determine the extent of the potential impacts on EFH, beyond the fact that the Pacific cod fixed gear fishery occurs in the species general distribution. No evidence suggests that the fixed gear Pacific cod fishery would have any impact on the EFH of salmon or scallops. The Pacific cod fixed gear fishery does not occur on any areas designated as Habitat Areas of Particular Concern (HAPC).

EFH Definition for BSAI Pacific Cod, by life stage

Eggs(duration 15-20 days) - Level 0_a - Areas of mud and sand on the inner, middle, and outer continental shelf and upper slope throughout the eastern Bering Sea and Aleutian Islands in winter and spring.

Larvae (duration unknown)- Level 0_a - Epipelagic waters throughout the eastern Bering Sea and Aleutian Islands regions in winter and spring.

Early Juveniles (up to 2 years) - Level 0_a - Areas of mud and sand and the water column on the inner and middle continental shelf of the eastern Bering Sea and Aleutian Islands, particularly those with mysids, euphausiids and shrimp.

Late Juveniles (2-4 years) - Level 1 -Areas of soft substrate (clay, mud, and sand) and the lower portion of the water column on the inner, middle, and outer continental shelf areas of the eastern Bering Sea and Aleutian Islands, particularly those with mysids, euphausiids, shrimp, pollock, flatfish, crab, and fishery discards.

Adults (4+ years old) - Level 2 - Areas of mud and sand along the inner, middle, and outer continental shelf up to 500m along with the lower portion of the water column of the eastern Bering Sea and Aleutian Islands. Spawning occurs in January-May near the bottom across broad areas of the shelf, but predominately along the outer shelf between 100-200 m in the eastern Bering Sea, and throughout the area<200m in the Aleutian Islands. After spawning, the mature population spreads out throughout the shelf in the eastern Bering Sea and Aleutian Islands, but with concentrations along the outer shelf northwest of the Pribilof Islands and along the outer and middle shelf areas northwest of the Alaskan Peninsula and into Bristol Bay. Feeding areas are those containing pollock, flatfish, and crab.

The relative intensity of harvest by pot catcher vessels versus pot catcher processors may be very slightly impacted under the different alternatives proposed for distributing the Pacific cod pot allocation, but is intended to reflect recent catch histories by each sector. Regardless, the total pot cod allocation will remain the same. Because this action does not change the location of the fishery, the Pacific cod fixed gear TACs, or the gear allocations in the BSAI, it is presumed not to increase the impacts of the fishery on EFH as a whole. The action is intended to stabilize the harvest distribution between pot catcher processors and pot catcher vessels, but the harvest will remain within the area designated as Pacific cod EFH. Based on the above, this action, in the context of the fishery as a whole, will not adversely affect EFH for species managed under the five North Pacific FMPs. As a result of this determination, an EFH consultation is not required.

3.1.5 Bycatch and Discard Impacts

Vessels in the fixed gear Pacific cod fishery catch other species incidentally when prosecuting a directed fishery. Bycatch includes prohibited species (primarily halibut and crab), other groundfish target species, and other species. Much of the bycatch is discarded. The ecological concern with bycatch and discards is that they have the potential to alter the regular paths of energy flow and balance in the marine system. The pot sector has been exempted from halibut bycatch allowances for several years due to the very low incident of halibut bycatch in the directed cod fisheries.

Because this amendment does not change the amount of Pacific cod harvested overall by pot gear in the fixed gear Pacific cod fishery, the total amount of bycatch is not expected to change. All allocated groundfish bycatch is counted against the TACs, and all prohibited species bycatch is counted against the PSC limits, thus no ecological impacts are projected to result from this amendment. In addition, groundfish discards in the BSAI pot cod fishery are relatively low. In 2001, pot vessels delivering to shoreside processors reported 29 mt of groundfish discards and pot catcher processors reported 25 mt, both of which represent less than 1%

of their total catch. Because the percentage of discards is similar in each pot sector, this action is not expected to affect the overall discard amount.

3.1.6 Ecosystem Considerations

Ecosystem considerations for the BSAI groundfish fisheries are explained in detail in Ecosystem Considerations for 2002 (NMFS 2001b). This document provides updated information on biodiversity, essential fish habitats, consumptive and non-consumptive sustainable yields, trophic interactions, and human considerations. This information is intended to be used in making ecosystem-based management decisions such as establishing ABC and TAC levels. The proposed action is not expected to have significant ecosystem impacts.

3.1.7 Endangered or Threatened Species

The Endangered Species Act of 1973 as amended (16 U.S.C. 1531 *et seq*; ESA), provides for the conservation of endangered and threatened species of fish, wildlife, and plants. The program is administered by NMFS for most marine mammal species, marine and anadromous fish species, and marine plants species and by USFWS for bird species, and terrestrial and freshwater wildlife and plant species.

The designation of an ESA-listed species is based on the biological health of that species. The status determination is either threatened or endangered. Threatened species are those likely to become endangered in the foreseeable future [16 U.S.C. § 1532(20)]. Endangered species are those in danger of becoming extinct throughout all or a significant portion of their range [16 U.S.C. § 1532(20)]. Species can be listed as endangered without first being listed as threatened. The Secretary of Commerce, acting through NMFS, is authorized to list marine fish, plants, and mammals (except for walrus and sea otter) and anadromous fish species. The Secretary of the Interior, acting through USFWS, is authorized to list walrus and sea otter, seabirds, terrestrial plants and wildlife, and freshwater fish and plant species.

In addition to listing species under the ESA, the critical habitat of a newly listed species must be designated concurrent with its listing to the "maximum extent prudent and determinable" [16 U.S.C. § 1533(b)(1)(A)]. The ESA defines critical habitat as those specific areas that are essential to the conservation of a listed species and that may be in need of special consideration. Federal agencies are prohibited from undertaking actions that destroy or adversely modify designated critical habitat. Some species, primarily the cetaceans, which were listed in 1969 under the Endangered Species Conservation Act and carried forward as endangered under the ESA, have not received critical habitat designations.

Federal agencies have an affirmative mandate to conserve listed species. Federal actions, activities or authorizations (hereafter referred to as a Federal action) must be in compliance with the provisions of the ESA. Section 7 of the ESA provides a mechanism for consultation by the Federal action agency with the appropriate expert agency (NMFS or USFWS). Informal consultations, resulting in letters of concurrence, are conducted for Federal actions that may affect, but are not expected to adversely affect, listed species or critical habitat. Formal consultations, resulting in biological opinions, are conducted for Federal actions that may have an adverse effect on the listed species. Through the biological opinion, a determination is made as to whether the proposed action is likely to jeopardize the continued existence of a listed species (jeopardy) or destroy or adversely modify critical habitat (adverse modification). If the determination is that the action proposed will cause jeopardy, reasonable and prudent alternatives may be suggested which, if implemented, would modify the action to avoid the likelihood of jeopardy to the species or destruction or adverse modification of designated critical habitat. A biological opinion with the conclusion of no jeopardy may contain recommendations intended to further reduce the negative impacts to the listed species. These

conservation recommendations are advisory to the action agency (50 CFR 402.25(j)). If a likelihood exists of any taking occurring during promulgation of the action, an incidental take statement may be appended to a biological opinion to provide for the amount of take that is expected to occur from normal promulgation of the action.

Twenty-three species occurring in the GOA and/or BSAI management areas are currently listed as endangered or threatened under the ESA (see table below). The group includes great whales, pinnipeds, Pacific salmon and steelhead, and seabirds.

Endangered and threatened species under the ESA that may be present in the BSAI

Common Name	Scientific Name	ESA Status
Northern Right Whale	*Balaena glacialis*	Endangered
Bowhead Whale	*Balaena mysticetus*	Endangered
Sei Whale	*Balaenoptera borealis*	Endangered
Blue Whale	*Balaenoptera musculus*	Endangered
Fin Whale	*Balaenoptera physalus*	Endangered
Humpback Whale	*Megaptera novaeangliae*	Endangered
Sperm Whale	*Physeter macrocephalus*	Endangered
Snake River Sockeye Salmon	*Oncorhynchus nerka*	Endangered
Short-tailed Albatross	*Diomedia albatrus*	Endangered
Steller Sea Lion	*Eumetopias jubatus*	Endangered and Threatened [1]
Snake River Fall Chinook Salmon	*Oncorhynchus tshawytscha*	Threatened
Snake River Spring/Summer Chinook Salmon	*Oncorhynchus tshawytscha*	Threatened
Puget Sound Chinook Salmon	*Oncorhynchus tshawytscha*	Threatened
Lower Columbia River Chinook Salmon	*Oncorhynchus tshawytscha*	Threatened
Upper Willamette River Chinook Salmon	*Oncorhynchus tshawytscha*	Threatened
Upper Columbia River Spring Chinook Salmon	*Oncorhynchus tshawytscha*	Endangered
Upper Columbia River Steelhead	*Onchorynchus mykiss*	Endangered
Snake River Basin Steelhead	*Onchorynchus mykiss*	Threatened
Lower Columbia River Steelhead	*Onchorynchus mykiss*	Threatened
Upper Willamette River Steelhead	*Onchorynchus mykiss*	Threatened
Middle Columbia River Steelhead	*Onchorynchus mykiss*	Threatened
Spectacled Eider	*Somateria fishcheri*	Threatened
Steller's Eider	*Polysticta Stelleri*	Threatened

[1] Steller sea lions are listed as endangered west of Cape Suckling and threatened east of Cape Suckling.

Of the species listed under the ESA and present in the action area, some may be negatively affected by commercial groundfish fishing. Section 7 consultations with respect to the actions of the Federal groundfish fisheries have been done for all the species listed below, either individually or in groups. An FMP-level biological opinion was prepared pursuant to Section 7 of the ESA on all NMFS-listed species present in the fishery management areas for the entire groundfish fisheries. The opinion was issued November 30, 2000 (NMFS 2000). The Steller sea lion was the only species to be determined in jeopardy or at risk of adverse modification of its habitat based upon the FMPs. A complete discussion of the Section 7 consultations to date on the species of relevance can be found in Section 2.9 of the DPSEIS (NMFS 2001a).

The Steller sea lion range extends from California and associated waters to Alaska, including the Gulf of Alaska and Aleutian Islands, into the Bering Sea and North Pacific, and into Russian waters and territory. Evidence of a major decline in Steller sea lion abundance throughout most of their range prompted several

environmental organizations to petition NMFS to list all populations of Steller sea lion in Alaska as endangered. On April 5, 1990, NMFS issued an emergency rule (55 FR 12645) to list the Steller sea lion as a threatened species under the ESA and established emergency interim measures to begin the population recovery process. Under the ESA, the Steller sea lion west of Cape Suckling, Alaska, was listed as endangered in 1997 (62 FR 30772); the population east of Cape Suckling was listed as threatened.

To satisfy the requirements of the ESA and a recent lawsuit regarding protection of the Steller sea lion and its habitat, NMFS initiated an FMP-level biological opinion to determine whether the BSAI or GOA groundfish fisheries, as implemented under the respective FMPs, jeopardize the continued existence of listed species in the areas affected by the fisheries, or adversely modify critical habitat of such species. The biological opinion was submitted November 30, 2000, and concluded that the BSAI and GOA Pacific cod, Atka mackerel, and pollock fisheries do jeopardize Steller sea lions and adversely modify their critical habitat due to competition for prey. The 2000 Biological Opinion included a reasonable and prudent alternative (RPA) which, if implemented in its entirety, would have had substantial adverse impacts to the fishing industry and fishing communities. In order to assure the ongoing Federal action of conducting the groundfish fisheries was in compliance with the ESA, NMFS would have had to implement the RPA by emergency rule for 2001. Federal legislation allowed for a phase-in of the RPA for the 2001 fisheries.

At the December 2000 meeting, the Council rejected the conclusions found in the biological opinion relative to the Steller sea lion and the RPA contained therein, and initiated two independent scientific reviews of the biological opinion to evaluate other possible explanations for the decline of the Steller sea lion. The Council also began a longer term process to consider measures to replace the RPA in the 2000 Biological Opinion and allow fisheries to operate in such a manner that would not jeopardize the Steller sea lion or its habitat. For this purpose, the Council established an RPA Committee that included members from the fishing community, the conservation community, NMFS, the Council's SSC, and the State of Alaska (NMFS 2001c). NMFS has since completed a Final SEIS on Steller sea lion protection measures (November 2001), the preferred alternative in which was developed by the committee and modified by the Council. On October 19, 2001, NMFS released a biological opinion that concluded that the preferred approach would not be likely to jeopardize the Steller sea lion or its habitat.

None of the alternatives under consideration would affect the prosecution of the BSAI cod fisheries in a way not previously considered relative to Steller sea lions. The proposed alternatives are designed to create distinct quotas for the pot catcher vessel and catcher processor sectors, in order to establish an allocation that conforms to the historical distribution among those sectors. This action would not change the species TACs, the amount of cod available to the pot sector, the gear type or general location of the fishery, or the manner in which the species are fished. Splitting the pot cod quota among the two sectors is not expected to affect takes of listed species. Therefore, none of the alternatives are expected to have a significant impact on endangered or threatened species.

3.2 Expected Economic Effects of the Alternatives

Two alternatives are being considered: **Alternative 1** - No action; and **Alternative 2** - Establish separate TACs for the pot catcher processor and pot catcher vessel sectors in the BSAI Pacific cod fishery. Six specific combinations of years are being considered to determine the percentage of the pot gear TAC that will be apportioned to each pot gear sector:

Option 1: 1996, 1997
Option 2: 1997, 1998

Option 3: 1996, 1997, 1998
Option 4: 1995, 1996, 1997, 1998
Option 5: 1995, 1996, 1997, 1998, 1999
Option 6: 1996, 1997, 1998, 1999

Suboption: Any portion of the Pacific cod pot catcher processor or pot catcher vessel quota that is unused by a specified date will be reallocated as follows:

a) Unused quota from either pot sector would be distributed to the other pot sector before it is reallocated over to the other fixed gear sectors
b) Unused quota from the pot catcher vessel sector would be distributed to the hook-and-line catcher vessel sector before it is reallocated over to the pot catcher processor sector.

Under Alternative 2, the Pacific cod TAC would be allocated among pot catcher vessels and pot catcher processors based on their historical catch during the time period selected under Options 1-6. The suboption addresses how cod annually allocated to the pot sector that is projected to remain unused would be reallocated to other sectors capable of harvesting that quota.

Harvest data were derived from NMFS Blend files for catcher processors and ADF&G fishtickets for catcher vessels. Had the analysis used Blend data for both sectors, the reported harvests would be slightly altered, but the changes would not be large enough to alter the resulting percentages. The difference is detailed in Section 3.2.2. Fixed gear deliveries from the CDQ fisheries were excluded as was bycatch of Pacific cod by other fisheries. For comparison, Pacific cod reallocated from the jig and trawl gear apportionments are excluded in the data presented under Section 3.2.2 and included in the data presented in Section 3.2.3.

Not all landings of Pacific cod in the bait fishery or halibut IFQ fishery are reported or included in this data set. Landings from the halibut IFQ fishery would only be included if it appeared that cod was the target species, since IFQ halibut are reported on a separate fishticket. Bait landings from the commercial cod bait fishery are included in this data set, but vessels are not required to report cod that is harvested for use as personal bait.

3.2.1 Alternative 1: No Action

Table 3.1 (same as Table 2.2 in the previous section) provides a description of the BSAI pot gear Pacific cod fishery from 1995 through 2001 (including any quota that was reallocated from the trawl and jig sectors). Note that 2001 data is considered preliminary. The 1995- 1999 data in Table 3.1 is used to calculate the allocation percentages (including roll-overs) of the options proposed under Alternative 2 in this section. However, the most recent data available (2000 and 2001) is also provided for baseline comparison purposes. Table 3.1 shows that during 1995 - 2001, the pot catcher vessel sector harvested 72 - 87% of the total pot sector catch and the pot catcher processor sector harvested the remaining 13 - 28%.

Recall that the License Limitation Program was not in place until January 1, 2000, thus an LLP license was not required during the time period (1995 -1999) under consideration. As stated previously, 203 unique pot catcher vessels participated in the directed cod fishery during 1995-99 and only an estimated 119 of those are LLP qualified. Of the 19 unique pot catcher processors that participated in the directed BSAI cod fishery during 1995-99, 15 of those are LLP qualified. In addition, with the implementation of Amendment 67, the

number of pot vessels eligible to fish BSAI cod is expected to be further reduced to an estimated 47 catcher vessels ≥60' and 6 catcher processors. Amendment 67 is expected to be in effect for the 2003 fishing season.

Thus, given that the LLP program and Amendment 67 were not in place during the years under

Table 3.1: Catch of BSAI Pacific cod in the directed cod fishery by pot vessels, 1995 - 2001 (in mt)

Year	Length	Catcher Processors			Catcher Vessels			Pot Gear Total	
		Catch	#	%	Catch	#	%	#	Catch
1995	<60'	*	1		412	16		17	*
	60+	*	6		16,008	103		109	*
95 Total		4,560	7	21.7%	16,420	119	78.3%	126	20,980
1996	<60'		-		86	4		4	86
	60+	8,266	11		23,375	91		102	31,641
96 Total		8,266	11	26.1%	23,461	95	73.9%	106	31,727
1997	<60'		-		*	3		3	*
	60+	5,015	9		*	77		86	*
97 Total		5,015	9	22.7%	17,086	80	77.3%	89	22,101
1998	<60'		-		*	3		3	*
	60+	3,546	7		*	70		77	*
98 Total		3,546	7	28.0%	9,098	73	72.0%	80	12,644
1999	<60'		-		38	4		4	38
	60+	3,131	13		11,761	88		101	14,892
99 Total		3,131	13	21.0%	11,799	92	79.0%	105	14,930
2000	<60'		-		*	2		2	*
	60+	2,607	9		*	110		119	*
00 Total		2,607	9	13.1%	17,356	112	86.9%	121	19,963
2001	<60'		-		581	5		5	581
	60+	3,063	6		14,182	69		75	17,245
01 Total		3,063	6	17.2%	14,763	74	82.8%	80	17,826

Source: ADF&G fishtickets and NMFS blend data, 1995 - 2000. Data for 2001 is preliminary.

*excludes confidential landings or data that would yield confidential landings by simple subtraction.

consideration, a smaller number of vessels will be eligible to fish cod than participated in the past. The proposed options in this amendment to split the pot cod quota are based on the catch histories of all 203 catcher vessels and 19 catcher processors that participated during 1995-99, while in the future only an estimated 47 catcher vessels ≥60' and 6 catcher processors are estimated to be eligible. These are only preliminary estimates of how many vessels may qualify in the future, based on the information available at this time. Pot catcher vessels <60' are not affected by Amendment 67, and are therefore allowed unlimited entry into the Pacific cod fishery providing they are LLP qualified. Therefore, the total number of eligible catcher vessels may be greater than 47 due to the potential for new entry by the <60' vessel class. Recall that only 16 unique pot catcher vessels <60' participated in the directed BSAI cod fishery during 1995-1999. Table 3.2 depicts the estimated number of participating and qualified pot vessels under each of these regulatory actions, and the estimated percent reduction in the pot fleet as a result of each of these actions.

Table 3.2: Estimated number of vessels participating in the BSAI pot cod fishery under open access, LLP, and upon implementation of Amendment 67 (cod endorsement)

	Pot catcher vessels		Pot catcher processors	
Vessel moratorium (1995-99)	203		19	
LLP qualified (eff. 2000)	119	(-41%)	15	(-21%)
Am. 67 qualified (eff. 2003)	47 (≥60')	(-61%)	6	(-57%)

Further, the fishery had not been apportioned among the hook-and-line and pot gear components until 2000. During 1995-99, 51 percent of the BSAI Pacific cod TAC was apportioned to the fixed gear sector as a whole. Between 1995 and 1999, these fishing practices resulted in hook-and-line vessels harvesting 74 - 88 percent of the total fixed gear apportionment (excluding roll-over amounts from other gear groups) and pot vessels harvesting the remaining 12 - 26 percent. Upon implementation of Amendment 64, the BSAI Pacific cod hook-and-line and pot gear TAC is apportioned 80 percent to hook-and-line catcher processors, 0.3 percent to hook-and-line catcher vessels, 18.3 percent to pot vessels, and 1.4 percent to catcher vessels <60' LOA.

The no action alternative under this amendment would continue the current management structure, apportioning among the hook-and-line and pot gear components but not further apportioning between the pot sectors. The result is that pot catcher processors and pot catcher vessels would compete among themselves to harvest as much of the 18.3% fixed gear TAC apportionment as possible. Between 1995-1999 (prior to approval of the fixed gear allocations under Amendment 64), under the existing management structure, pot catcher vessels harvested 72 - 79 percent of the total pot sector catch and pot catcher processors harvested the remaining 21 - 28 percent each year. Thus, if no action was taken, we would expect a generally similar distribution among the pot sectors.

However, the pot catcher vessel sector harvested a slightly higher percentage of the total pot sector harvest in 2000 and 2001 than in the past several years. In 2000, the distribution was about 87% pot catcher vessels and 13% pot catcher processors, and in 2001, the distribution was about 83% pot catcher vessels and 17% pot catcher processors. As mentioned previously, a delayed opilio opening may have contributed to a higher number of catcher vessel participants in 2000. A total of 112 pot catcher vessels participated in the BSAI directed Pacific cod fishery in 2000, the greatest number of individual vessels since 1995. In 2001, the number of unique catcher vessels was 74, which is more consistent with previous years and less than the seven-year average of 92. A shorter opilio fishery may lead to more effort in the Pacific cod fishery by pot catcher vessels, as many members of the opilio fleet have historically entered the Pacific cod fishery after the crab season closed. There are a number of smaller vessels in this sector that are dependent on cod as a secondary fishery, and a shorter and/or delayed crab season, like the ones experienced in 1999, 2000, and 2001, allows those vessels to enter the cod fishery earlier in the year. In 2001, the crab fishery began in January but was also relatively short.

Due to the regulatory changes in the BSAI cod fishery discussed above, there is no fishing year that is representative of the regulatory conditions of the pot cod fishery should the Council choose to take no action on the proposed amendment. There has not yet been a fishing year in which the License Limitation Program, Amendment 64, and Amendment 67 have all been in place, and this will not likely occur until the 2003 fishing season. A distinct pot cod quota under Amendment 64 results in a limit on potential Pacific cod

revenues by the pot sector, while Amendment 67 substantially reduces the number of pot vessels that are eligible to fish that quota.

In addition, the abundance of fish stocks targeted by pot vessels is projected to change over the foreseeable future. Pacific cod is relatively stable, but while estimates of abundance are higher in 2001 than in 2000, spawning biomass is projected to decline through 2003. Greenland turbot are expected to continue to decline, and red king crab abundance is estimated to either remain stable or decline slightly. As stated previously, the condition of the opilio fishery is also a major concern. While there is some indication that more recruitment can be expected in 2002, given the history of trends in spawning biomass for this stock, it is difficult to predict whether the increase seen in 2001 will continue to increase to the "rebuilt" level in the near future (NMFS 2001d). The snow crab fishery has been the mainstay of the pot gear fleet, accounting for a vast majority of the total revenue generated by this fleet (NMFS 2001d). If the price of snow crab does not offset the reduced catches (and current prices and inventory levels suggest it will not), the pot fleet on average is expected to be financially impacted in the foreseeable future.

Noting the uncertainty associated with future crab fisheries and the projected reduction in the number of pot vessels eligible to fish BSAI pot cod upon implementation of Amendment 67 (cod endorsement), it is difficult to project whether the no action alternative would either: result in a distribution to pot catcher vessels close to the 1995-1999 average of 75-76%; continue to result in a slight increase to pot catcher vessels as occurred in 2000 and 2001; or shift a larger percentage of the harvest to pot catcher processors than has historically occurred. However, due to the increasing number of catcher vessels participating in the BSAI cod fishery since 1999 and the limitations of alternative fisheries noted above, most factors indicate that the increase in the harvest by catcher vessels would likely continue under the no action alternative. Thus, Alternative 1 may not mitigate the concerns expressed in the problem statement related to protecting the historical harvest of pot catcher processors who have made significant long-term investments, have long catch histories, and are significantly dependent on the BSAI cod fisheries.

Given the wide range of influences that could have a sizable effect on the direction of this fishery, attempts to specify conditions under the no action alternative are highly conjectural. Because the status quo is affected by a very dynamic process, it is not appropriate to portray it as a static point of departure to compare against the alternatives should no action be taken. However, a point of reference is necessary in order to evaluate the options under consideration against a reasonable backdrop, and the most recent period for which (preliminary) data is available can provide such a baseline. This analysis uses the sectoral catch distribution from the 2001 fishing season to represent the baseline, bearing in mind that this represents a reasonable reference for current conditions rather than a projection of the no action alternative. In 2001, the distribution of BSAI cod harvest among pot sectors was about 83% pot catcher vessels and 17% pot catcher processors.

3.2.2 Alternative 2: Options 1 - 6 (Excluding Roll-overs)

Alternative 2 would establish separate TACs for the pot catcher processor and pot catcher vessel sectors in the BSAI Pacific cod fishery. Six specific combinations of years are being considered to determine the percentage of the pot gear TAC that will be apportioned to each pot gear sector:

Option 1:	1996, 1997
Option 2:	1997, 1998
Option 3:	1996, 1997, 1998
Option 4:	1995, 1996, 1997, 1998
Option 5:	1995, 1996, 1997, 1998, 1999
Option 6:	1996, 1997, 1998, 1999

If the Council selects an option under Alternative 2, there are two additional decision points:
1) whether to include or exclude roll-overs in determining the harvest percentages for the pot cod sectors, and **2)** whether to further apportion the pot sector's roll-over allocation among pot catcher processors and pot catcher vessels. These decision points are discussed in the following Section 3.2.3. This section focuses on the effect of the options when quota reallocated from other gear sectors to the pot sector is not included.

Table 3.3a represents the pot sector catch distribution when roll-overs from the trawl and jig gear apportionments are not included. Under Amendment 64, the pot sector is allocated 5% of the total roll-overs allocated to the fixed gear sector. According to discussions with members of industry during deliberations on Amendment 64, it was their intent that the original fixed gear split be calculated excluding roll-over harvest. This analysis presents the information for Alternative 2 both including and excluding roll-over amounts; the Council will need to express their intent when selecting the preferred alternative.

To exclude roll-overs, the amount of Pacific cod reallocated from the jig and trawl sectors was determined from NMFS news releases. The roll-over amount was then subtracted from the total fixed gear catch. If the fishery was closed because the hook-and-line fleet hit the halibut cap before the TAC was taken or because of conservative management practices, then the amount of TAC left on the table was subtracted from the roll-over. This was done because not all of the TAC rolled over to the fixed gear sector would have been harvested that year. Weekly catch histories were then summed, starting at the beginning of the year, until the level of the initial fixed gear apportionment was reached.

For example, in 1999, the fixed gear apportionment of the TAC was 95,300 mt, which included 11,800 mt of roll-over from the trawl and jig sectors. NMFS reports that only 95,002 mt[6] were caught before the fishery reached bycatch limits, so a difference of 298 mt went unharvested. This difference of 298 mt was then

[6]Note that in Table 3.1, the total harvest for the 1999 fixed gear sector is reported to be 92,328 mt, based on NMFS Blend data for catcher processors and ADF&G fishticket data for catcher vessels. When only NMFS Blend data were used the total was 95,002 mt. Variation between the two amounts is the result of using fishtickets to estimate the harvest by individual catcher vessels. Using the catch of individual catcher vessels was necessary to determine the number of catcher vessels participating in the fishery and their size class. The difference between the two methods of estimating catch is 2,674 mt. This difference is a result of variations in catch estimates throughout the entire fishing year, and should not be assumed to have occurred only during the roll-over period. Taking that into account, the difference during the roll-over period is likely closer to 200-300 mt. Even if the entire difference had occurred during the roll-over period, that amount of catch would not change our estimate of the week in which roll-over catch started counting. This is due to the size of the difference in the two estimates relative to the weekly harvest of Pacific cod by the fixed gear sector during the relevant weeks. Therefore, for the calculations done in this section, the difference in catch between the two data sources does not have any impact on the results.

subtracted from the roll-over amount of 11,800 mt, resulting in 11,502 mt of net roll-over to be excluded from the catch tally for the overall fishery. A cut-off date for the fishery was then determined by adding the cumulative catch backwards from the end of the season until it summed to the net roll-over amount of 11,502 mt. This occurred during the 40th week of the year, corresponding to a week ending date of October 2nd. Therefore, each of the alternatives considered in this section that include the year 1999 only count data through October 2nd, 1999. This same method of determining when the fixed gear sector began fishing on Pacific cod rolled-over from the trawl and jig sectors was also used for the other years included in this analysis. Using this method to account for roll-overs, catch history stopped counting on October 21, October 26, December 13, November 28, and October 2 for the years 1995 through 1999, respectively. The catch by each pot gear group was then calculated using the truncated data set.
Percentage allocations in Table 3.3a are calculated by summing the catch of each pot gear group over the

Table 3.3a: Distribution of Pacific cod catch (mt) within the pot sector of the BSAI Pacific cod target fishery under the proposed options (excluding roll-overs)

OPTION	Total Pot Catch	Pot catcher/processors			Pot catcher vessels		
		Catch	Average catch/vessel[1]	Percent of total pot catch	Catch	Average catch/vessel[1]	Percent of total pot catch
Baseline (01)	17,826	3,063	511	17.2%	14,763	200	82.8%
1: (96,97)	52,993	13,098	1,008	24.7%	39,895	332	75.3%
2: (97,98)	34,650	8,494	772	24.5%	26,156	242	75.5%
3: (96-98)	65,599	16,606	1,186	25.3%	48,993	350	74.7%
4: (95-98)	85,151	21,160	1,411	24.8%	63,991	350	75.2%
5: (95-99)	99,792	24,230	1,275	24.3%	75,562	372	75.7%
6: (96-99)	80,240	19,676	1,093	24.5%	60,564	372	75.5%

Source: ADF&G fishtickets and NMFS blend data 1995-99.

Note: The 2001 (baseline) catch data includes a small amount of "rollover" harvest.

[1]Average catch per vessel is based on the actual number of unique vessels that participated in the directed BSAI cod fishery during the years considered in each option.

specified time period and dividing that amount by the total pot sector catch for that time period. The resulting percentages can be multiplied by the 2002 pot gear TAC (18.3% of the 2002 fixed gear TAC = 17,175mt) to provide an estimate of the future years' catch under each of the alternatives. This method does not attempt to estimate future roll-over catch amounts based on future TACs. Revenues at the ex-vessel level for pot catcher vessel deliveries, and at the first wholesale level for both pot sectors are also made in this section, based on the 2002 TAC excluding roll-overs. The first wholesale revenue estimates also depend on the products produced by that sector and will be discussed later.

The percentage of cod catch (excluding roll-over harvest) attributed to each pot sector under each option is reported in Table 3.3a. The upper and lower bounds of the range are highlighted. Recall that the options under consideration for a pot split in Alternative 2 are based on the catch histories of all 203 pot catcher vessels and 19 pot catcher processors that participated during 1995-99. **Pot catcher vessels accounted for 75 - 76 percent of the total pot harvest over the range of options, and pot catcher processors accounted for 24 - 25 percent.** It is the actual catch distribution during the series of years listed in the options that would determine the separate pot allocations considered in this action. Thus, the options under consideration would allocate approximately **4.4% - 4.6% of the total fixed gear BSAI cod quota to pot catcher processors and 13.7% - 13.9% to pot catcher vessels**, maintaining the 18.3% total pot quota (see Table 3.3b).

There is a difference of less than one percentage point (0.2) of the total fixed gear Pacific cod TAC among all of the options under Council consideration when roll-overs are excluded; 0.2 percentage points represents

Table 3.3b: Percent of total fixed gear BSAI TAC allocated to each pot sector under Options 1-6

OPTION	Pot catcher processors		Pot catcher vessels	
	% of fixed gear BSAI cod TAC[1]	mt (2002 TAC)	% of fixed gear BSAI cod TAC[1]	mt (2002 TAC)
Baseline (2001)	3.1%	2,954	15.2%	14,221
1: (96,97)	4.5%	4,223	13.8%	12,951
2: (97,98)	4.5%	4,223	13.8%	12,951
3: (96-98)	4.6%	4,317	13.7%	12,857
4: (95-98)	4.5%	4,223	13.8%	12,951
5: (95-99)	4.4%	4,129	13.9%	13,045
6: (96-99)	4.5%	4,223	13.8%	12,951

[1]The fixed (hook-and-line and pot) gear BSAI Pacific cod TAC is 51% of the total BSAI Pacific cod TAC. The 2002 fixed gear BSAI Pacific cod TAC = 93,850 mt.

about 188 mt of the pot gear share of the BSAI fixed gear TAC in 2002. Option 5, based on the average catch history over 1995-1999, would allocate the largest amount to pot catcher vessels (13.9% of the total hook-and-line and pot gear BSAI cod TAC). Option 3, based on catch history from 1996-1998, would allocate the smallest percentage to pot catcher vessels (13.7%) and the largest to pot catcher processors (4.6%). The no action alternative (baseline) is represented by the 2001 fishery. The harvest distribution in 2001 would translate into allocations of 3.1% to pot catcher processors and 15.2% to pot catcher vessels. Therefore, any option selected under Alternative 2 would decrease the percentage harvested by pot catcher vessels relative to that harvested by pot catcher processors by up to 1½ percentage points (1,408 mt using the 2002 TAC) compared to the baseline.

3.2.3 Options 1 - 6 (Including Roll-overs)

If the Council selects an option under Alternative 2, there are two additional decision points: **1)** whether to include or exclude roll-overs in determining the harvest percentages for the pot cod sectors, and **2)** whether to further apportion the pot sector's roll-over allocation among pot catcher processors and pot catcher vessels.

Roll-over amounts of cod are presented in Table 3.4. Harvest of roll-overs in the pot sector is often small in comparison with the hook-and-line sector of the fixed gear cod fishery for a couple of reasons. First, many pot vessels leave the cod fishery to harvest crab before the roll-over portion of the TAC is harvested. Second, Pacific cod are generally more dispersed from late summer through early winter, compared to spring spawning aggregations. Using pot gear to harvest cod is more difficult when the fish are less aggregated. Both of these factors likely contribute to the lower relative catch by pot vessels later in the year.

Table 3.4 shows that the distribution of roll-over harvest between pot catcher processors and catcher vessels varies widely year to year, from virtually zero roll-over harvest taken by catcher vessels in 1998 to almost the entire amount taken by that sector in 1995. In 1999, on the other hand, the roll-over distribution closely approximated the distribution of the original TAC. Note that the total roll-over harvest taken in 1995 is relatively high compared to more recent years; 1995 also had the highest number of catcher vessel participants

during the time period. As discussed in Section 2.0, participation in that year may have been influenced by the fact that it was the last year to qualify for an LLP area endorsement. Overall, the average roll-over harvest in the pot sector since 1996 has been fairly small, about 1 percent of the total pot harvest.

Decision point 1: whether to include roll-overs in determining the harvest percentages for the pot cod sectors

Table 3.4: Distribution of reallocated BSAI Pacific cod quota (roll-overs) between the pot sectors (in mt)

	Catcher/Processors		Pot Catcher Vessels		Total Pot Sector	Roll-over Harvest as a % of Total Pot Sector Harvest
Year	mt	%	mt	%	Roll-over Harvest	
1995	6	0.4%	1,422	99.6%	1,428	6.8%
1996	154	19.8%	624	80.2%	778	2.5%
1997	29	50.9%	28	49.1%	57	0.3%
1998	28	100.0%	0	0.0%	28	0.2%
1999	61	21.1%	228	78.9%	289	1.9%
Average 96-98	70	24.4%	217	75.6%	287	1.0%
Average 96-99	68	23.6%	220	76.4%	288	1.2%

Table 3.5 shows the distribution of cod harvest among pot catcher processors and catcher vessels when the harvest percentages are calculated including roll-over catch from the trawl and jig sectors. **Including roll-overs does not change the *range* of distribution: pot catcher vessels accounted for 75 - 76 percent of the pot catch under the options, and pot catcher processors accounted for 24 - 25 percent.** The actual allocations derived from the percentages under each option in Table 3.5 are the same as those presented in Table 3.3b. **Thus, the options under consideration would effectively allocate 4.4% - 4.6% of the total fixed gear BSAI cod quota to pot catcher processors and 13.7% - 13.9% to pot catcher vessels, regardless of whether roll-over harvest is included in the calculations.**

Including roll-overs increases the percentage of catch harvested by catcher vessels relative to catcher processors by up to 0.4 percent, depending on the option selected. Only Option 2 reduces the catcher vessel percentage, and then only very slightly (less 0.1%). Note that including roll-over harvest affects Options 4 and 5 the greatest, as those options include 1995 catch history. The pot catcher vessel sector harvested a greater proportion of the pot roll-over harvest in 1995 than any other year (see Table 3.4). However, as stated previously, including rollover harvest does not change the actual allocations derived from each of the options.

Compared to the baseline harvest distribution realized in 2001 (83 percent attributed to catcher vessels), every option decreases the percentage of the total pot catch attributed to pot catcher vessels by about 6 - 8 percentage points. When the options are calculated excluding roll-over catch, the percentage allocated to catcher vessels relative to 2001 decreases by approximately the same amount. The fact that including roll-overs has a minimal effect on the harvest percentages is more a factor of the small magnitude of the roll-over amounts compared to the initial TAC allocated to the pot sector, and less that the roll-overs reflect the exact percentages of the original TAC taken by each sector. **Because the rollover amounts do not affect the**

range of the split proposed under the options, the remainder of this section will report only the impacts of options when rollovers are included.

Decision point 2: whether to further apportion rollovers received by the pot sector among pot catcher processors and pot catcher vessels

Table 3.5: Distribution of Pacific cod catch (mt) within the pot sector of the BSAI Pacific cod target fishery under the proposed options (including roll-overs)

OPTION	Total Pot Catch	Pot catcher/processors			Pot catcher vessels		
		Catch	Average catch/vessel[1]	Percent of total pot catch	Catch	Average catch/vessel[1]	Percent of total pot catch
Baseline (01)	17,826	3,063	511	17.2%	14,763	200	82.8%
1: (96,97)	53,828	13,281	1,022	24.7%	40,547	338	75.3%
2: (97,98)	34,735	8,551	777	24.6%	26,184	242	75.4%
3: (96-98)	66,462	16,817	1,201	25.3%	49,645	355	74.7%
4: (95-98)	87,442	21,377	1,425	24.4%	66,065	361	75.6%
5: (95-99)	102,372	24,508	1,290	23.9%	77,864	384	76.1%
6: (96-99)	81,392	19,948	1,108	24.5%	61,444	377	75.5%

Source: ADF&G fishtickets and NMFS blend data 1995-99.

[1]Average catch per vessel is based on the actual number of unique vessels that participated in the directed BSAI cod fishery during the years considered in each option.

Amendment 64 (effective in 2000) specifies that any quota rolled over to the fixed gear sector is allocated 5% to the pot sector and 95% to the hook-and-line catcher processor sector. This method is based on the actual harvest of rollovers during 1996-1998. In 2000 and 2001, 12,000 mt and 27,000 mt of cod quota was rolled over to the fixed gear sector from the jig and trawl sectors, respectively. Five percent of that roll-over quota translates into 600 mt and 1,330 mt reallocated to the pot fleet in 2000 and 2001, respectively. **Should the Council choose to further split the 5% pot roll-over allocation and use the same method (years 1996-98), approximately 24% of the roll-over amount allocated to the pot fleet would go to pot catcher processors, and 76% to pot catcher vessels** (Table 3.4). These percentages do not change if 1999 data is included.

3.2.4 Impact of Pacific Cod Endorsement (BSAI Amendment 67)

3.2.4.1 Catch distribution between endorsed pot catcher processors and catcher vessels

BSAI Amendment 67, adopted by the Council in April 2000 and approved by the Secretary in November 2001, adds a requirement for a Pacific cod endorsement for fixed gear (hook-and-line and pot) vessels fishing BSAI Pacific cod in Federal waters, in addition to the area endorsement on their general license. The final rule for this amendment was issued April 15, 2002, and the endorsements will be effective on January 1, 2003. The intent of Amendment 67 is to limit the participants in the fishery, beyond the limitations currently in place under the LLP program, to vessels that have historically participated in, and are substantially dependent on, the BSAI Pacific cod fishery. Thus, the Pacific cod fixed gear TAC would be allocated among the hook-and-line catcher processor, hook-and-line catcher vessel, and pot vessel fleets according to Amendment 64, and the number of boats in each sector would be limited according to the proposed participation and landings requirements detailed in the Council's preferred alternative for Amendment 67. The qualification criteria and estimated number of qualifying vessels is depicted in Table 3.6.

Table 3.6: Criteria for qualification for a BSAI cod endorsement under Am. 67 and estimated number of qualifying pot vessels

	Landings criteria	Estimated number of endorsed vessels
Pot catcher processors	300,000 lbs of directed BSAI cod landings in any 2 years 1995-98	6
Pot catcher vessels ≥60 ft	over 100,000 lbs of directed BSAI cod landings in each of any 2 years 1995-99	47
Pot catcher vessels <60 ft	no cod endorsement required	n/a

Tables 3.2 and 3.6 show that under Amendment 67, the pot catcher processor sector would potentially be reduced from 15 LLP qualified participants to 6 eligible vessels,[7] and pot catcher vessels ≥60' reduced from 119 LLP qualified participants to 47 eligible vessels. Because the qualification requirements adopted in Amendment 67 would greatly affect the number of pot vessels eligible to fish BSAI Pacific cod, the relative cod harvest history of the eligible vessels in the pot sectors may greatly differ when only the eligible vessels' catch is used versus the catch of all pot vessels that participated in those years. **This section provides data on the catch distribution among pot sectors using the catch histories of only those pot vessels that are estimated to qualify for a Pacific cod endorsement under Amendment 67.** While these numbers are still preliminary and the cod endorsements under Amendment 67 have not yet been implemented, this information was provided to show the potential difference between the historical catch distribution of all vessels in both pot sectors versus the distribution among only those pot vessels that would be fishing the pot quotas under Amendment 67.

While vessels less than 60' are not required to hold a cod endorsement under Amendment 67, the catch history of this vessel class is included in determining the historical distribution among "eligible" pot catcher processors and catcher vessels in this section. Because there is no gear or species endorsement requirement for the <60' class, potentially every non-trawl vessel <60' with a BSAI LLP license could fish BSAI cod. This equates to approximately 117 qualified pot and hook-and-line vessels. However, only 16 unique pot catcher vessels <60' have recorded at least one landing in the directed BSAI cod fishery during 1995-99. Thus, while the cod fishery may experience additional effort from new entrants <60' in the future, only the catch histories from these 16 vessels are included to provide an estimate of the total harvest by the catcher vessel sector during the specified years. The catch of this vessel class makes up less than 1% of the total pot catcher vessel catch in every year but 1995 (2.5%).

Table 3.7 shows the distribution of catch in the pot cod fishery under each option using catch histories only from vessels that appear to be both LLP qualified and eligible under the proposed criteria for a Pacific cod endorsement. The calculations include roll-over catch.
Potentially endorsed pot catcher vessels accounted for 75 - 76.6 percent of the total cod harvested by all "endorsed" pot vessels over the range of options, and pot catcher processors accounted for 25 - 23.4 percent. Using this distribution would allocate approximately **13.7% - 14.0%** of the total hook-and-line and

[7] Previous estimates under Amendment 67 showed that only five LLP qualified pot catcher processors would potentially qualify for a BSAI Pacific cod endorsement.

pot gear share of the BSAI Pacific cod TAC to pot catcher vessels and **4.3% - 4.6%** to pot catcher processors. **This is very similar to the allocations that would result from the options under consideration to split the pot cod quota based on the catch histories of all vessels that had been participating in 1995 - 1999 (13.7 - 13.9% to catcher vessels and 4.4 - 4.6% to catcher processors).** There is a maximum difference of about 0.2 percent among the options using these two methods for determining the pot allocations (Option 1). This 0.2 percent represents about 188 mt of Pacific cod under the 2002 fixed gear BSAI Pacific cod TAC.

Option 1, based on the average catch history over 1996-97, results in the largest percentage attributed to endorsed pot catcher vessels, 76.6 percent of the total pot gear harvest. Option 2, which considers catch history from 1997-98, attributes the smallest percentage (75.0 percent) to endorsed pot catcher vessels and

Table 3.7: Distribution of Pacific cod catch (mt) within the endorsed[1] pot catcher vessel sector of the BSAI Pacific cod target fishery under the proposed options (including roll-overs)

OPTION	Total Pot Catch	Pot catcher/processors			Pot catcher vessels		
		Catch	Average catch/vessel[2]	Percent of total pot catch	Catch	Average catch/vessel[2]	Percent of total pot catch
Baseline (2001)	12,008	2,597	649	21.6%	9,411	209	78.4%
1: (96,97)	41,752	9,787	1,631	23.4%	31,965	603	76.6%
2: (97,98)	26,912	6,729	1,682	25.0%	20,183	420	75.0%
3: (96-98)	50,425	12,332	2,055	24.5%	38,093	668	75.5%
4: (95-98)	69,042	16,890	2,815	24.5%	52,152	828	75.5%
5: (95-99)	77,825	18,729	3,122	24.1%	59,096	938	75.9%
6: (96-99)	59,208	14,171	2,362	23.9%	45,037	738	76.1%

Source: ADF&G fishtickets and NMFS blend data 1995-99.

[1]Vessels that have an LLP license and appear to qualify for a cod endorsement under BSAI Am. 67. An estimated 47 pot cvs greater than or equal to 60' and 6 pot cps qualify for a cod endorsement. Though pot cvs <60' are not required to have a cod endorsement, 16 cvs <60' participated in the BSAI directed cod fishery during 1995-99. The catch history of these 63 pot cvs (47 + 16) is used to determine the split under this scenario.

[2]Average catch per vessel is based on the actual number of unique vessels that qualify for a cod endorsement and participated in the directed BSAI cod fishery during the years considered in each option. Catch by pot cvs <60' is included, even though are not required to have a cod endorsement under Am. 67.

the largest to pot catcher processors (25.0 percent). Compared to the split among pot sectors in 2001 (based on preliminary data), any option under Alternative 2 decreases the percentage harvested by endorsed pot catcher vessels relative to that of endorsed pot catcher processors by 1.8 - 3.4 percent.

In sum, there is a minimal difference when the distribution among sectors is calculated using only the sub-sector of vessels that may qualify for a Pacific cod endorsement in the future as opposed to all vessels that participated in recent years. Any estimate of future effort in the cod fishery would be highly speculative, but given the issues discussed previously regarding the depressed opilio stock and limited opportunities in other fisheries, it is likely that the "endorsed" vessels under Amendment 67would continue their current efforts in the cod fishery. Recall from Section 2.0 that relatively few of the pot vessels with directed cod harvests accounted for the majority of the pot cod harvests from 1995-99. Six of the 203 pot catcher vessels accounted for 25 percent of the catch, 17 vessels (50 percent), 38 vessels (75 percent), and 69 vessels (90 percent). In the pot catcher processor sector, four of the 19 catcher processors accounted for 68 percent of the catch and 10 harvested over 90 percent of the total. Specifically, the pot vessels that appear will qualify for a cod endorsement harvested 73 - 79% of the total cod catch under the proposed options. It is these "core" boats

that qualify for a cod endorsement under Amendment 67 and will be eligible to participate in the cod fishery in the future.

While the cumulative effect of Amendments 67 and 68 on the pot cod fleet is important to consider, the overall allocative effect mirrors that of Amendments 64 and 67 on the hook-and-line sector. The difference remains in the timing of the actions; Amendment 64 first established separate TACs for the hook-and-line catcher vessels and catcher processors and, subsequently, Amendment 67 reduced the fleet of eligible participants by establishing criteria for a cod endorsement. In the case of the pot sector, Amendment 67 first reduced the fleet of eligible participants by establishing endorsement criteria, and Amendment 68 has been subsequently proposed to split the pot cod TAC among endorsed pot catcher vessels and catcher processors. Therefore, with the exception of the timing, the proposed action does not treat the pot cod fleet substantively different from the other fixed gear sectors fishing BSAI cod.

3.2.4.2 Expected average catch under alternatives for Amendment 68 and Amendment 67

At the request of the Council, Table 3.8 is included to show the expected average cod catch per vessel under each of the options for Amendment 68 and the potential implementation of Amendment 67. It is important to recognize that regardless of the outcome of this proposed amendment, we would not expect the same number of participants in the cod fishery as were participating during 1995-1999. This is because the License Limitation Program was not effective until 2000. Thus, it is not meaningful to present the average cod catch per vessel during 1995-1999 for comparison purposes, since that time period does not represent the status quo condition of the fishery. Table 3.8 demonstrates the average catch projected under Amendment 67, both with and without approval of the action (Am. 68) under consideration.

While we cannot be certain as to the exact number of vessels that will participate in the BSAI cod fishery in the future, an estimate is necessary to determine the expected average cod catch per vessel under the alternatives. The analysts used the maximum number of vessels that are projected to qualify under Amendment 67 in order to estimate the average catch per vessel as a result of Amendment 68. (Thus, the average catch per vessel is higher as represented under the options in Tables 3.5 and 3.7 because not all of the eligible vessels participated every year.) Amendment 67 would reduce the fishery to an estimated 6 catcher processors and 47 catcher vessels ≥60'. In addition, vessels <60' are exempt from the cod endorsement, so any number of the (117) LLP qualified vessels <60' would be eligible to fish BSAI cod. However, only 16 pot vessels <60' have made at least one landing in the directed cod fishery during 1995-99, resulting in the estimated total of 69 pot vessels.

Table 3.8 shows that without the pot split, the average cod catch among these 69 vessels would be 249 mt. This assumes that all 69 pot vessels compete evenly and harvest an equal percentage of the overall pot cod TAC. With the pot split, catcher vessels would be allocated 13.7 - 13.9% of the total hook-and-line and pot gear share of the BSAI Pacific cod TAC and catcher processors would be allocated the remaining 4.4 - 4.6%. Using the 2002 TAC, the average catch for the 63 catcher vessels (47 endorsed vessels ≥60' plus an estimated 16 <60') would range from 204 - 207 mt, and the average catch for the 6 endorsed catcher processors would range from 688 - 720 mt.

If Amendment 68 is approved, the expected average catch per catcher vessel is slightly lower than is projected if no action is taken (yet these scenarios assume a static number of vessels in the fishery and perfect competition among all vessels in both sectors). In the catcher processor sector, the average catch per catcher processor increases dramatically if the pot split under Amendment 68 is approved, primarily because that sector would be reduced to an estimated six vessels under Amendment 67 and would be secured an allocation of up to 4.6% of the hook-and-line and pot gear share of the Pacific cod TAC under Amendment 68. Likewise, the average catch per pot catcher vessel decreases slightly if Amendment 68 is approved.

Table 3.8: Expected average BSAI Pacific cod catch per vessel under the proposed allocations for Amendment 68, considering the potential implications of the Pacific cod endorsement (Am. 67) and based on the 2002 TAC[1]

Alternatives	# eligible pot vessels	Pot catcher/processors average catch (mt)						Pot catcher vessels average catch (mt)					
Alt. 1: No pot split[2]	69 (6 cps + 63 cvs)	249	249	249	249	249	249	249	249	249	249	249	249
Alt. 2: Pot split based on options under consideration[3]	6 cps 63 cvs	Op.1: 4.5%	Op. 2: 4.5%	Op. 3: 4.6%	Op. 4: 4.5%	Op. 5: 4.4%	Op. 6: 4.5%	Op.1: 13.8%	Op. 2: 13.8%	Op. 3: 13.7%	Op. 4: 13.8%	Op. 5: 13.9%	Op. 6: 13.8%
		704	704	720	704	688	704	206	206	204	206	207	206
Pot split based on % of "endorsed" cod catch taken by each pot sector[4]	6 cps 63 cvs	Op.1: 4.3%	Op. 2: 4.6%	Op. 3: 4.5%	Op. 4: 4.5%	Op. 5: 4.4%	Op. 6: 4.4%	Op.1: 14.0%	Op. 2: 13.7%	Op. 3: 13.8%	Op. 4: 13.8%	Op. 5: 13.9%	Op. 6: 13.9%
		673	720	704	704	688	688	209	204	206	206	207	207

Source: ADF&G fishtickets and NMFS blend data 1995-99.

[1]Under Amendment 64, the pot sector is allocated 18.3% of the fixed gear cod TAC of 93,850 mt, resulting in a 2002 pot gear TAC of 17,175 mt.

[2]All pot vessels with a BSAI LLP groundfish license and a cod endorsement would be competing for the pot cod TAC. This results in an estimated total of 68 pot vessels (47 cvs >60' + 16 cvs <60' + 6 cps). While cvs <60' are not required to hold a cod endorsement under Am. 67, 16 vessels <60' have made at least one landing of cod in the directed fishery during 1995-99.

[3]The pot cod TAC would be split between cvs and cps according to the percentages listed under Options 1-6. Pot cps and cvs with a BSAI LLP groundfish license and a cod endorsement would be eligible to harvest their respective gear sector's cod TAC. This results in an estimated 63 pot cvs and 6 cps.

[4]These options represent the actual percentage splits among pot cvs and cps using the pot cod harvested only by estimated "endorsed" vessels under Am. 67. They are shown for comparison purposes only.

For comparison purposes, Table 3.8 also shows the average cod catch per vessel if the options for splitting the BSAI pot cod TAC were based on the actual percentages of the harvest taken by vessels that are estimated to qualify for cod endorsements under Amendment 67. Because these percentages are very similar to those under the options using all participating vessels' catch history, the average cod catch per vessel does not change substantially. In this case, pot catcher vessels would be allocated 13.7 - 14.0% of the total hook-and-line and pot gear share of the BSAI Pacific cod TAC and average 204 - 209 mt per vessel. Pot catcher processors would be allocated 4.3 - 4.6% of the total hook-and-line and pot gear share of the BSAI Pacific cod TAC and average 673 - 720 mt per vessel.

In sum, while the implication of Amendment 67 is significant with regard to the estimated number of vessels that would be eligible to fish BSAI Pacific cod in the future, it does not raise significant issues with regard to the cod allocations between pot sectors that result under the proposed options. Because the harvest distributions among endorsed vessels under the options are very similar to those for all vessels that participated in 1995 -1999, the remainder of this section will provide the impacts of the alternatives as they are currently established using the percentage split among pot sectors that occurs based on the harvest of all participating vessels. Further analysis of the implications of Amendment 67 would not provide any additional information.

3.2.5 Revenue Estimates by Alternative

Estimates of Pacific cod revenue can be calculated using the 2002 TAC, the apportionments under each of the six options, and prices. There are well-documented problems associated with comparing revenues between catcher vessel and catcher processor sectors within an industry (NMFS 1998, NPFMC et al 94). Applying an ex-vessel price to vessels that catch and process their own fish assumes that they would need to pay the market price to catcher vessels if they were only processing cod. There is no market transaction between harvester and first processor in this case, so it is not possible to determine if this assumption represents reality. This assumption certainly would not provide a good estimate of a catcher processor's gross revenues, since the revenues generated from processing that fish are not included. A better method for determining catcher processor gross revenues is comparing first wholesale revenue. Therefore, ex-vessel revenues will be used to compare the impacts of the options on the catcher vessel sector, and first wholesale revenues will be used for both the catcher vessel and catcher processor sectors.

The ex-vessel revenues for the baseline (2001) scenario are included to provide the reader with a reference point. They are not an accurate representation of future ex-vessel revenues in the cod fishery absent a pot gear split, as the catch levels, effort, and cod prices are not static in time. For comparison purposes, the ex-vessel revenues under the 2001 baseline scenario were determined by applying the 2001 harvest percentages to the 2002 pot gear TAC.

3.2.5.1 Ex-vessel Revenue Estimates Under Options 1-6

As described in Section 2.0, ex-vessel prices from 1998 will be used in this section to generate estimates of the distributional impacts the Council's alternatives will have on pot catcher vessels. General information on 1999 prices was included in Section 2.0 to provide the reader a sense of current market conditions. However, because these data were collected through informal discussions with members of industry, they will not be used to project changes in gross revenues among the sectors. The most current year of available data (1998) will be used to make the projections. ADF&G fishticket data were used to estimate ex-vessel prices for BSAI shorebased deliveries in 1998. The method used to estimate ex-vessel prices is detailed in Section 2.3.5 of this document. This method yielded a price of $0.192/lb for pot gear.

Table 3.9 shows the projected gross ex-vessel revenues of the pot catcher vessel sector under each option being considered by the Council, as well as the average ex-vessel revenue per vessel. Recall that rollover harvest did not affect the overall allocation to each pot sector. As expected, Option 3 and Option 5 provide the upper and lower estimates of ex-vessel revenue at $5.44 and $5.52 million, respectively. The greatest difference in ex-vessel revenues between any two options is estimated at $80,000.

Catcher vessels also harvested a larger percentage of the total pot sector harvest in 2001 versus any of the options under consideration. Thus, the 2001 baseline ex-vessel revenues exceed those calculated under the any of the options: catcher vessels would be projected to generate $6.04 million at the ex-vessel level under the 2002 TAC. This represents an increase of $520,000 over the next highest ex-vessel revenue generating option (Option 5).

Table 3.9: Projected estimates of ex-vessel BSAI Pacific cod revenue within the pot catcher vessel sector under the options, based on the 2002 TAC[1] and 1998 ex-vessel prices

OPTION	% of total pot catch	Allocation (% of fixed gear cod TAC)	Catch (mt)	Ex-vessel revenue ($ Million)
Baseline (2001)[2]	82.8%	15.2%	14,265	$6.04
1: (96,97)	75.3%	13.8%	12,951	$5.48
2: (97,98)	75.4%	13.8%	12,951	$5.48
3: (96-98)	74.7%	13.7%	12,857	$5.44
4: (95-98)	75.6%	13.8%	12,951	$5.48
5: (95-99)	76.1%	13.9%	13,045	$5.52
6: (96-99)	75.5%	13.8%	12,951	$5.48

Source: ADF&G fishtickets and NMFS blend data 1995-99.

[1]The 2002 fixed gear TAC is 93,850 (accounting for 7.5% CDQ reduction and a 500 mt incidental catch allowance for cod taken in other directed longline and pot fisheries). Under Amendment 64, the pot sector is allocated 18.3% of the fixed gear TAC, resulting in a 2002 pot gear TAC of 17,175 mt.

[2]Baseline ex-vessel revenues are calculated using the 2001 harvest percentages and the 2002 TAC.

Assumptions: Price of $0.192/lb for pot catcher vessels. It is also assumed that the 2002 TAC continues into the future.

Note: Projected harvests by pot catcher/processors are not included in this table because no ex-vessel transaction occurs.

3.2.5.2 First Wholesale Revenue Estimates under Options 1-6

The amount paid to the first processors of fish for their product is first wholesale revenue. This section of the analysis uses 1998 production patterns and prices to project changes in product mix and first wholesale revenues under each alternative and option.

Chapter 2 (Section 2.2.7) details the method used to estimate first wholesale prices by sector. Data from the 1998 COAR reports were used to estimate first wholesale price by product form and gear type where possible, and NMFS Weekly Production Reports were used to estimate production. Because both data sets report similar product forms, few adjustments were needed to match product forms to prices. The 1998 COAR data set cannot be used to estimate product mix, because catcher processors operating outside of State waters were not required to file COAR reports in 1998. Therefore, it is likely that not all at-sea processors voluntarily opted to file COAR reports for the 1998 fishery. A regulation change in 1999 requires them to do so in future years.

With the first wholesale price, the production by sector, and the product recovery rate, a measure of the first wholesale value per ton of round cod can be estimated. Table 2.11 in Section 2.0 provides estimates of this calculation in dollars per metric ton. The results show that inshore deliveries generate about $923 and pot catcher processors $1,166 per metric ton of round fish. Recall that the inshore values are likely underestimated because they also include trawl deliveries. However, it is not possible to determine the extent to which trawl deliveries impact the price per ton estimate without tracking product through the production process from delivery to first processed sale. Given the allocation percentage estimates provided in Table 3.3b and an assumed fixed gear allocation of 93,850 metric tons (based on the 2002 TAC, excluding roll-overs), estimates of the impacts of each option at the first wholesale level can be calculated using the 1998 first wholesale prices provided above.

Table 3.10 provides projected estimates of first wholesale revenues generated by the pot sector in the BSAI

Table 3.10: Projected estimates of first wholesale revenue generated by the pot gear sector in the BSAI Pacific cod fishery under the options[1], based on the 2002 TAC[2] and 1998 first wholesale prices

OPTION	Pot catcher vessels				Pot catcher/processors				Total Pot Sector Revenues
	% of total pot catch	Allocation (% of fixed gear cod TAC)	Catch (mt)	$ Million	% of total pot sector catch	Allocation (% of fixed gear cod TAC)	Catch (mt)	$ Million	
Baseline (2001)[3]	82.8%	15.2%	14,265	$13.17	17.2%	3.1%	2,909	$3.39	$16.56
1: (96,97)	75.3%	13.8%	12,951	$11.95	24.7%	4.5%	4,223	$4.92	$16.88
2: (97,98)	75.4%	13.8%	12,951	$11.95	24.6%	4.5%	4,223	$4.92	$16.88
3: (96-98)	74.7%	13.7%	12,857	$11.87	25.3%	4.6%	4,317	$5.03	$16.90
4: (95-98)	75.6%	13.8%	12,951	$11.95	24.4%	4.5%	4,223	$4.92	$16.88
5: (95-99)	76.1%	13.9%	13,045	$12.04	23.9%	4.4%	4,129	$4.81	$16.86
6: (96-99)	75.5%	13.8%	12,951	$11.95	24.5%	4.5%	4,223	$4.92	$16.88

Source: ADF&G fishtickets and NMFS blend data 1995-99.

[1]The harvest percentages for each of the options are calculated including roll-over catch (see Table 3.5).

[2]The 2002 fixed gear TAC is 93,850 mt. It is assumed that the 2002 TAC continues into the future.

[3]Baseline first wholesale revenues are calculated using the 2001 harvest percentages and 2002 TAC.

Assumptions: Price of $923/mt for pot catcher vessels and $1,166/mt for pot catcher/processors.

Pacific cod fishery under each of the proposed options. The percentages representing the split of the pot harvest among the options includes rollover catch, but recall that the allocations to each pot sector based on these percentages do not change regardless of whether rollovers are included. Given these assumptions, pot catcher processor first wholesale revenues from cod are estimated to be $4.81 - $5.03 million, and first wholesale revenues generated from pot catcher vessel deliveries are $11.87 - $12.04 million.

Several assumptions were made to assess *average* first wholesale revenues under Options 1-6. The first is the assumption that 6 pot catcher processors and 47 catcher vessels ≥60' will qualify for a cod endorsement and continue to fish Pacific cod using pot gear in the future. The second is that all 16 catcher vessels <60' that participated during 1995-1999 also continue to fish Pacific cod in the future. Using these assumptions, average first wholesale revenues per catcher processor would range from $0.96 million to $1.01 million under Options 1-6, and average first wholesale revenues attributed to catcher vessel deliveries would range from $188,000 - $191,000. Note that the average first whole revenues attributed to catcher vessel deliveries may be underestimated, however, as fewer than 16 catcher vessels <60' have been fishing Pacific cod in any one year using pot gear in the recent past (in 2001, only 5 vessels <60' reported directed cod landings).

Because the analysis assumes that the first wholesale revenue per ton is constant for each sector, the marginal impact of moving a ton of cod from one sector to another is the difference in the projected revenues per ton. Therefore, moving a ton of cod from the pot catcher vessel sector to the pot catcher processor sector would increase overall revenues by about $243 ($1,166 - $923). This value likely overestimates the actual impact, since the first wholesale revenue for pot catcher vessels is underestimated due to the inclusion of lower value trawl catch in the calculation.

Summing first wholesale revenues across the pot sector yields a total of $16.56 million (baseline) to $16.90 (Option 3). This difference of $340,000 accounts for about 2% of total revenues under either the baseline or any option. Projected first wholesale revenues among the options differs by less than 1%. Given the

relatively small difference in total revenues between the options and the level of uncertainty in their estimation, it is not advisable that these comparisons alone provide the basis for an allocation change.

Regardless of the sector to sector differences in projected revenues, impacts on the overall profitability of the fleets cannot be estimated using a gross revenue analysis, thus precluding a quantitative assessment of net benefits. Furthermore, the lack of cost data also frustrates attempts to track the changes in sectoral expenditures that result from different revenues. Therefore, impacts across related industries are also difficult to realize. Additional information on the costs of production is needed for estimation of net revenue and impact analysis. These data are not currently available.

3.3 Suboption: reallocation of pot catcher vessel quota

The following suboption is also included for consideration under this amendment:

Suboption: Any portion of the Pacific cod pot catcher processor or pot catcher vessel quota that is unused by a specified date will be reallocated as follows:

a) Unused quota from either pot sector would be distributed to the other pot sector before it is reallocated over to the other fixed gear sectors
b) Unused quota from the pot catcher vessel sector would be distributed to the hook-and-line catcher vessel sector before it is reallocated over to the pot catcher processor sector.

The suboption provides direction on how to reallocate Pacific cod that is annually allocated to pot vessels that is projected to remain unharvested in a given year. Two options are provided to redistribute any cod that is projected to remain unharvested: a) reallocate any unused quota from either pot sector to the other pot sector before distributing to other fixed gear sectors (hook-and-line), or b) reallocate any unused pot catcher vessel quota to hook-and-line catcher vessels and then, if that is to remain unharvested, reallocate to pot catcher/processors. Without providing explicit direction on this suboption, it is assumed that NMFS will address the reallocation as is currently done for the other fixed gear cod fisheries. Currently in the BSAI fixed gear cod fishery, any amount of cod annually allocated to hook-and-line catcher vessels or to vessels less than 60 feet LOA that is projected to remain unharvested is reallocated (rolled over) to the hook-and-line catcher/processor fleet. Thus, although Council direction is preferred, absent direction on this issue, NMFS would likely reallocate any unharvested pot catcher vessel share to the pot catcher/processors and vice versa (Suboption a).

The cod allocations established by Amendment 64 to the BSAI fixed gear sectors have only been in effect since August 2000, thus only 2001 provides a full year example of how the reallocations (rollovers) have been working under Amendment 64. In addition, Amendment 64 specifies that the projected unused trawl and jig catch is allocated 95% to hook-and-line catcher processors and 5% to pot gear (without processing mode distinction).

In both 2000 and 2001, the pot sector harvested its entire quota and also received 5% of the quota rolled over from the trawl and jig sectors in October. In 2000, the pot sector was reallocated an additional 600 mt from the trawl and jig sectors and harvested all of its revised share. In 2001, the pot sector was reallocated 1,330 mt from the trawl and jig sectors, resulting in a total annual pot allocation of 17,469 mt. The pot sector as a whole had 963 mt remaining according to the NMFS preliminary catch reports through 12/31/01, having harvested 94% of of their total annual share by year's end. Should the Council adopt Alternative 2, it may

choose to specify how to provide for rollovers from the pot catcher vessel sector to other fixed gear sectors under this suboption.

In addition, pot (and hook-and-line) catcher vessels <60 ft have a separate allocation of 1.4% of the total hook-and-line and pot gear allocation of the Pacific cod TAC. Any unused quota from this sector is rolled over to the hook-and-line catcher processor sector in September, as established under Amendment 64. Thus, this suboption only applies to the 18.3% pot quota that is proposed to be split among pot catcher vessels and catcher/processors, and does not affect the allocation specific to pot vessels <60 ft (see Figure 3.1)

Suboption a: unused quota would be reallocated to the pot catcher/processor sector

As stated above, Suboption a would follow the pattern generally used to reallocate quota, and reallocate any amount of cod annually allocated to either pot sector that is projected to remain unharvested to the other pot

Figure 3.1: Reallocation structure under Am. 64 and as proposed under Am. 68

Amendment 64	**Amendment 68**	
	Suboption - Option a:	*Suboption - Option b:*
Catcher vessels <60 ft;	Pot catcher vessels	Pot catcher vessels
Hook-and-line catcher vessels	↓	↓
↓	Pot catcher/processors	Hook-and-line catcher vessels
Hook-and-line catcher/processors		↓
		Pot catcher/processors

sector at some point in the second (B) season. Similarly under Amendment 64, any amount of cod annually allocated to hook-and-line catcher vessels or to vessels less than 60 feet LOA that is projected to remain unharvested is reallocated (rolled over) to the hook-and-line catcher/processor fleet in September. It is assumed that, because the second (B) pot season is September 1 - December 31, quota would not roll over from one pot sector to another until after September. As part of its ongoing inseason management, NMFS would determine the appropriate time within the second season at which quota would be reallocated should Alternative 2 be adopted.

This provision, similar to reallocation provisions in other fisheries, is intended to prevent any quota from remaining unharvested. Because Amendment 67 has not yet been implemented, it is uncertain whether either pot fleet, as reduced under that action, would have difficulty harvesting their entire allocation under the options in Alternative 2. The pot fleet has been concerned in the past about being able to find cod in the B season, as the fish are less aggregated and more difficult to target with pot gear. However, as discussed previously, the pot fleet took almost their entire allocation (including reallocated quota) in 2001. In addition, because the boats that qualified for a cod endorsement under Amendment 67 are the "core" boats which harvested the majority of the pot cod catch in 1995-1999, and because reduced crab GHLs are still a concern for many pot vessels who depend, at least in part, on the crab fisheries, the pot fleet may not have a problem harvesting their entire allocation under Alternative 2, Options 1-6. However, should some pot quota remain unharvested late in the year, this suboption provides for that quota to be reallocated within the pot fleet at some point during the second (B) season.

Suboption b: unused quota would be reallocated to the hook-and-line catcher vessel sector

Suboption b would require that any unused quota from the pot cod catcher vessel sector be first reallocated to the hook-and-line catcher vessel sector. If the hook-and-line catcher vessel sector was projected not to

harvest all of its rollover amount, the quota would then be reallocated to pot catcher/processors. Note that the hook-and-line catcher vessel sector receives portions of two separate allocations: 0.3% of the total fixed gear allocation of Pacific cod TAC is allocated to hook-and-line catcher vessels of any length and 1.4% of the total fixed gear allocation is allocated to hook-and-line and pot vessels <60'. The annual harvest from hook-and-line vessels <60' is attributed to the 0.3% allocation until that has been fully harvested, then the <60' hook-and-line vessels work off their 1.4% allocation.

The remainder of this section assumes that under Suboption b any unused quota from the pot catcher vessel sector would be reallocated to the hook-and-line catcher vessels' 0.3% allocation. The Council should clarify if its intent is to instead reallocate quota to the 1.4% allocation dedicated to hook-and-line and pot vessels <60'. In the past two years, the <60' fleet has not harvested its full 1.4% allocation, but it appears likely to do so in 2002. NMFS reports that the catch rates are higher in 2002, and several small pot vessels and a few hook-and-line vessels have been fishing the 1.4% allocation. (Smoker, pers. comm.). As of early May 2002, vessels <60' using pot gear (as opposed to hook-and-line) have taken the large majority of the harvest to-date, about 34% of the 2002 allocation of 1,314 mt.

The impact of Suboption b depends upon whether or not the hook-and-line catcher vessel fleet is capable of harvesting its entire allocation in a given year. The hook-and-line catcher vessel sector harvested its entire quota (0.3% of the total hook-and-line and pot gear allocation of Pacific cod TAC) in 2000 and 2001. Upon implementation of Amendment 64 in mid-2000, the hook-and-line catcher vessel directed cod fishery was closed because it had already harvested its 0.3% allocation. This sector did not receive any reallocated quota in 2000. In 2001, the hook-and-line catcher vessel sector also took its entire initial allocation (265 mt) and received an additional 400 mt of reallocated cod quota from the jig and trawl sectors. By years end, this sector had harvested 96% of its total allocation. The 2002 allocation to this sector equates to 282 mt. Considering the past two years, it appears that the hook-and-line catcher vessel sector can harvest its entire 0.3% allocation established under Amendment 64 and potentially more.

However, consider also that there were several more hook-and-line vessels fishing during recent years than will be eligible when Amendment 67 is implemented. For instance, 13 unique hook-and-line catcher vessels ≥60 ft LOA participated in the BSAI cod fishery during 1995-1999 and are also LLP qualified. Under Amendment 67, only an estimated 3 hook-and-line catcher vessels ≥60 ft will qualify for a cod endorsement and be able to participate in the BSAI cod fishery in the future. However, because a cod endorsement is not required for catcher vessels <60 ft, an unknown number of smaller vessels will enter or continue to participate in the hook-and-line cod fishery, which makes it difficult to determine the total number of hook-and-line catcher vessels that will participate in the BSAI cod fishery in the future. Noting this uncertainty, because of the limited alternative fisheries available to this fleet and the current concern with the salmon fisheries, we may expect more of these smaller vessels to enter or continue to participate in the Pacific cod fishery. For context, 44 unique hook-and-line catcher vessels participated in the directed BSAI cod fishery during 1995-1999 and were LLP qualified (31 of which were <60'). More recently, 66 total unique hook-and-line catcher vessels participated in the directed BSAI cod fishery in 2000 and preliminary data shows that 72 hook-and-line catcher vessels participated in the BSAI cod fishery in 2001.[8] However, Amendment 67 was not in place for either of those years.

[8]This data is from 2001 fishtickets and it has not yet been confirmed whether each of those vessels was targeting Pacific cod.

One additional complicating factor for the catcher vessels using hook-and-line gear is the halibut mortality cap they share with the hook-and-line catcher processors. The catcher processors use the majority of the halibut bycatch allowance, but both sectors must stop fishing when the cap has been reached.

Suboption b would require NMFS to reallocate unused pot quota to this sector if it appeared it could harvest the additional cod. The second cod hook-and-line season is June 10 - December 31, and Amendment 64 states that any cod quota projected to remain unused by this sector will be rolled over to the hook-and-line catcher/processors in September. Recall that the second cod pot (B) season is September 1 - December 31. Thus, by the time a determination is made that the pot catcher vessel sector would not be able to harvest its entire allocation, it should also be apparent whether the hook-and-line catcher vessel fleet is going to able to take its entire allocation and whether it could harvest any quota reallocated from the pot sector. It is therefore assumed that if quota needs to be reallocated *from* the hook-and-line catcher vessel fleet *to* the hook-and-line catcher/processor fleet in September, the hook-and-line catcher vessel fleet would not receive any reallocated quota from other gear sectors. In that case, any unused pot catcher vessel quota would be reallocated directly to the pot catcher/processors.

Regardless of the preferred suboption, it may be most effective to view the suboptions as setting an order of preference of recipients of reallocated quota, and allow the Regional Administrator to make the inseason determination regarding which sector is capable of harvesting the quota and subsequently allocate the quota to that sector. One of the problems for the fleets in general is starting and stopping, and a fleet that is not based in Alaska may not want to come back after the season has closed to fish a small amount of reallocated quota. (Four of the five pot catcher processors that are projected to qualify for a cod endorsement are based outside of Alaska.) For instance, if the pot catcher processors took their allocation in early October and there was a substantial pot catcher vessel fleet fishing crab with the intent to fish cod after the crab season ends, many pot catcher processors may choose to return home. If at that point, the catcher vessel effort lessens and there is still a small amount of their Pacific cod share remaining, it is unlikely that the pot catcher processors would return to fish a small amount of cod (Andy Smoker, pers. comm.).

Thus, it may be worthwhile to retain some flexibility regarding reallocated quota and allow the Regional Administrator to make the determination, with the order of preference as determined by the Council under the suboptions. Essentially, Suboption a requires that any unused quota be reallocated within the pot sector before reallocating to the hook-and-line sector. Suboption b gives the hook-and-line catcher vessel fleet the first opportunity to harvest quota reallocated from the pot catcher vessel sector if they are capable of doing so, but does not appear to increase the risk that any of the hook-and-line and pot gear allocation of Pacific cod TAC will go unharvested.

3.4 Cooperative Formation

Preliminary estimates show that six pot catcher processors are expected to qualify for a BSAI Pacific cod endorsement. If these vessels are allocated a percentage of the BSAI fixed gear Pacific cod TAC under Amendment 68, it is conceivable that such a small number of participants could work together to better manage the harvest of that fish. Given the current trends in the North Pacific fisheries, that would likely mean the formation of a fishing cooperative by the six catcher processors. If this amendment to split the pot cod allocation among the catcher processors and the catcher vessels is not approved by the Council, the formation of cooperatives is less likely. To fully protect the interests of the cooperative would require that all participants in the fishery join the cooperative. The relatively large number of vessels participating in the fishery (approximately 69 vessels: 6 catcher processors, 47 vessels ≥60', 16 vessels <60') could be an obstacle

to the formation of such a cooperative.[9] A cooperative might form with a large number of participants, if the parties are able to pattern a cooperative after previously cooperative negotiated agreements and enforcement is believed to be feasible.

Harvesting their Pacific cod allocation under a cooperative structure would allow the vessel owners to know prior to the start of fishing season how much cod they would be allowed to harvest. They could then determine when and where to harvest the cod according to the rules defined by NMFS and the cooperative. Depending on the structure of the cooperative this could lead to operational advantages in other fisheries. However, the fishing opportunities for vessels using pot gear are much fewer than are available to the pollock vessels fishing under the AFA cooperatives. Pot vessels typically fish for opilio crab when the season is open and switch to cod when the crab fishery closes. Cod is then usually harvested until either the TAC is harvested or the CPUEs drop to a level where it is not economical to fish. Other crab species are then harvested in the fall. Recent catch history data indicates that outside of the crab and cod fisheries there are few other opportunities for pot catcher processors. Therefore, the pot catcher processor sector may receive a greater advantage from the proposed split under Amendment 68 than the pot catcher vessels, all other things being equal. However, the impacts that they could have on other fisheries are likely much less than was feared from the trawl vessels under the AFA.

3.5 Summary and Conclusions

With regard to environmental impacts, none of the alternatives under consideration would affect the prosecution of the BSAI cod fisheries in a way not previously considered. The proposed alternatives are designed to create distinct quotas for the pot catcher vessel and catcher processor sectors, in order to establish an allocation that conforms to the historical distribution among those sectors. This action would not change the species TACs, the amount of cod available to the pot sector, the gear type or general location of the fishery, or the manner in which the species are fished. Splitting the pot cod quota among the sectors is not expected to affect takes of listed species. Therefore, none of the alternatives are expected to have significant environmental impacts.

With regard to economic impacts, net revenues generated from the directed pot gear Pacific cod fishery cannot currently be estimated, given the constraints of the available data. This analysis has estimated the gross revenue by sector for each option. Gross revenue estimates do not provide adequate information to make informed judgements regarding the profitability of the directed cod fishery, which is the more desirable economic comparison, but it is the best information that is currently available.

Alternative 1 would maintain the current management structure in which pot catcher processors and pot catcher vessels would compete among themselves to harvest as much of the 18.3% fixed gear TAC apportionment as possible. During 1995-1999 (prior to approval of the fixed gear allocations under Amendment 64), the current management structure resulted in pot catcher vessels harvesting 72 - 79 percent of the total pot sector catch and pot catcher processors harvesting the remaining 21 - 28 percent each year. Thus, if no action was taken, we would assume that the distribution of harvest would not change significantly. Estimates of such a potential change in the absence of an allocation cannot be made, although indications are that each pot sector may be looking to increase their relative share of the pot harvest.

[9] Since some vessel owners may own multiple vessels participating in the fisheries, the number of persons that could form a comprehensive cooperative might be less than the number of vessels. Vessel ownership information is not available, however, preventing a precise measure of the number of vessel owners participating in the fishery.

Noting the uncertainty associated with future crab fisheries and the projected reduction in the number of pot vessels eligible to fish BSAI pot cod upon implementation of Amendment 67 (cod endorsement), it is difficult to project whether the no action alternative would: 1) result in a distribution to pot catcher vessels close to the 1995-1999 average of 75-76%; 2) continue to result in a slight increase to pot catcher vessels as occurred in 2000 and 2001; or 3) shift a larger percentage of the harvest to pot catcher processors than has historically occurred. However, due to the increasing number of catcher vessels participating in the BSAI cod fishery since 1999 and the limitations of alternative fisheries noted in this section, most factors indicate that the increase in the harvest by catcher vessels would likely continue under the no action alternative. Thus, Alternative 1 may not mitigate the concerns expressed in the problem statement related to protecting the historical harvest of pot catcher processors who have made significant long-term investments, have long catch histories, and are significantly dependent on the BSAI cod fisheries.

The intent of the proposed amendment (Alternative 2) is to split the pot allocation among pot gear groups of the BSAI Pacific cod fishery at percentages approximating the recent harvest distribution. **The options under consideration would allocate between 24 - 25 percent of the BSAI pot cod TAC to pot catcher processors and 75 - 76 percent to pot catcher vessels. This equates to an allocation of 4.4 - 4.6 percent of the total fixed gear BSAI cod quota to pot catcher processors and 13.7 - 13.9 percent to pot catcher vessels** (maintaining the 18.3% total pot quota established under Amendment 64). These percentages represent harvests in this fishery during 1995-1999. Including reallocated catch from other gear sectors slightly shifts the distribution in favor of catcher vessels, but does not change the overall range of percentage allocations to each pot sector.

Under the proposed amendment, it is possible that potential revenues could decrease for one sector, but that again depends on the level of catch that might have been achieved in the absence of an allocation. For example, pot catcher vessels harvested 83% of the total pot harvest in 2001, which equates to 15.2% of the hook-and-line and pot gear share of the total BSAI Pacific cod TAC. Under this action, if pot catcher vessels are allocated Pacific cod based on harvesting 75% of the total pot harvest, which equates to an allocation of 13.7% of the hook-and-line and pot cod TAC, they have about 1.5 percent (1,408 mt using the 2002 TAC) less than the most recent year's share, even though such an allocation may be greater relative to what they might achieve in the future without a direct allocation. Impacts of this action on potential revenues cannot be isolated from other factors including price fluctuation, amount of effort exerted by latent permits, and stock fluctuation of alternative fisheries such as crab.

No substantial changes in the structure of the fishery are expected to occur as a result of the options under consideration for Amendment 68 alone; the action is intended to preserve the harvest distribution established among pot sectors in the recent past (1995-1999). However, while the distribution of quota from 1995-1999 would be fixed under this action, the number of vessels that will be eligible to harvest the allocations will change substantially when Amendment 67 is implemented.

Amendment 67, which will be effective for the 2003 fishing season, adds a requirement for a Pacific cod endorsement for processing vessels and vessels ≥60' fishing BSAI cod in Federal waters using non-trawl gear. Recall that under Amendment 67, the qualifications for a cod endorsement differ for catcher processors and catcher vessels. To qualify for a cod endorsement, catcher processors must have harvested at least 300,000 lbs of BSAI cod in each of any two years 1995-98 and catcher vessels must have harvested 100,000 lbs of BSAI cod in each of any two years 1995-99. This action will reduce the number of pot vessels eligible to fish BSAI cod to an estimated 6 catcher processors and 47 catcher vessels ≥60'. These are only preliminary estimates, and, because of the time necessary to conduct appeals of interim licenses, the effect of the program

on the number of vessels fishing BSAI cod with fixed gear will not be seen immediately and is somewhat uncertain.

Thus, it is important to consider that only a subset of the pot vessels that created the fishing history from which the options are derived for this amendment will receive a cod endorsement and continue to be eligible to fish BSAI cod in the future. **Of the *endorsed* pot vessels' total harvest under the options, preliminary data indicate that 23.4 - 25.0 percent was harvested by pot catcher processors and 75.0 - 76.6 percent was harvested by pot catcher vessels.** Thus, because the harvest distributions among endorsed vessels under the options are very similar to those for all vessels that participated in 1995 -1999, there is a minimal difference when the distribution among sectors is calculated using only the sub-sector of vessels that may qualify for a Pacific cod endorsement in the future as opposed to all vessels that participated in recent years. If this distribution among endorsed pot sectors was to be used, for instance, catcher vessels would be allocated **13.7 - 14.0%** of the fixed gear BSAI cod TAC and catcher processors would be allocated **4.3 - 4.6%**. In sum, while the implication of Amendment 67 is significant with regard to the estimated number of vessels that would be eligible to fish BSAI Pacific cod in the future, it does not raise significant issues with regard to the cod allocations between pot sectors that result under the proposed options.

There are also two suboptions to provide direction on how to reallocate Pacific cod that is annually allocated to pot vessels that is projected to remain unharvested in a given year: a) reallocate any unused quota from either pot sector to the other pot sector before reallocating to the hook-and-line sector, or b) reallocate any unused pot catcher vessel quota to hook-and-line catcher vessels and then, if that is to remain unharvested, reallocate to pot catcher processors. Without providing explicit direction on this suboption, it is assumed that NMFS will address the rollovers as is currently done for the hook-and-line cod fisheries and reallocate any quota projected to remain unharvested in either pot sector to the other pot sector before reallocation to other gear sectors (Suboption a).

Suboption b would require NMFS to reallocate unused pot catcher vessel quota to the hook-and-line catcher vessel sector if it appeared it could harvest the additional cod. Because of the timing of the seasons, it should be apparent whether the hook-and-line catcher vessel fleet is going to able to take its entire allocation and whether it could harvest any reallocated quota. The hook-and-line catcher vessel sector harvested all of its allocation in 2001, including some reallocated quota, and may have the capability to increase their efforts even though it is difficult to predict the number unique vessels that will be fishing in the future. Regardless of the preferred suboption, it may be most effective to view the suboptions as setting an order of preference of recipients of reallocated quota, and allow the Regional Administrator to make the inseason determination regarding which sector is capable of harvesting the quota and subsequently allocate the quota to that sector.

4.0 CONSISTENCY WITH APPLICABLE LAWS

4.1 Context and Intensity as required by NEPA

To determine the significance of impacts of the actions analyzed in this EA, NMFS is required by NEPA and 50 CFR 1508.27 to consider both the *context* and the *intensity* of the action.

Context: The setting of the action is the commercial Pacific cod pot fishery in the Bering Sea/Aleutian Islands. Any effects of the proposed action are limited to this area. The effect on society within these areas is primarily isolated to the direct participants in the commercial pot cod fisheries in the BSAI. There are no changes to commercial fishing practices; the intent of the proposed action is to split the current 18.3% pot cod quota in the BSAI among pot catcher processors and pot catcher vessels. The principal consequence of the proposed alternative is to allow each sector of the fishery a distinct quota, so one sector would not be able to encroach on another sector's relative historical harvest.

Intensity: A listing of considerations to determine the intensity of the impacts are in 50 CFR 1508.27(b). Each consideration is addressed below in the order it appears in the regulations.

1. **Beneficial and adverse impacts** are required to be considered in this action. The alternatives under consideration would create separate quotas for the BSAI pot catcher categories, based on the historical distribution of the harvest between the two pot sectors during 1995-1999. The principal benefit is to allow each pot sector a distinct quota, which would prevent competition between the sectors for the cod quota and help to ensure that each sector receives its historical share. Whether this action would benefit one sector over another is difficult to determine and critically dependent upon the future harvest of each sector should no action be taken. A larger share of the pot harvest has been taken by pot catcher vessels in the past several years, up to 87% in 2000 and 83% in 2001. However, it is difficult to predict whether this trend will continue considering the impacts of Amendment 67, which, upon implementation, would reduce both sectors of the BSAI pot cod fleet substantially. Section 3.2 has a more detailed discussion of the impacts of the options under Alternative 2.

2. No **public health and safety impacts** were identified in any of the proposed alternatives.

3. This action takes place in the **geographic area** of the Bering Sea and Aleutian Islands. The action is limited to the pot cod fishery in the BSAI. No effects on the unique characteristics of this area are anticipated to occur with any alternative considered because fishing practices are not affected.

4. The effect of this action on the human environment is not **controversial** in the sense that it will not adversely affect the biology of the Pacific cod biomass. The action may be socially and economically controversial to the current and future participants in the fishery in that it would define a distinct pot cod quota for catcher vessels and catcher processors. Depending on each sector's participants' perspective on how they would fare in the fishery if no action was taken, this action may or may not be controversial to the pot cod sector participants. In one sense, the action may not be controversial, as each sector would be allocated a portion of the pot cod quota based on their historic averages. Thus, there is a perspective that each sector is receiving an allocation equal to what it has earned in the past. Some pot catcher processors have asserted that the competition between catcher vessels and catcher processors inhibits rationalization of the cod fishery, and that separate quotas would make it easier to move in this direction. Other members of the catcher processor sector contend that they should be able to fish when they can get the best price, as opposed to being tied to the catcher vessels' preferences regarding the timing of the fishery.

In another sense, if one sector believes that it can harvest an increased share of the total pot sector TAC in the future, it may be opposed to the action under consideration. Some stakeholders in the catcher vessel sector may feel that they are disadvantaged by the proposed action because they would otherwise be capable of harvesting more of the pot cod TAC than they have historically. This trend is evident in that the catcher vessel sector has increased its harvest of the pot cod TAC relative to the pot catcher processor sector in the past few years. However, the notion of this trend continuing is critically dependent on the level of effort in each pot sector fleet in the future. The pending implementation of the cod endorsements under Amendment 67 (Jan. 1, 2003) will directly affect the number of vessels in the pot fleet in each sector, and it is therefore difficult to predict whether either sector would gain a relative advantage if the action was approved. Thus, it is also difficult to assess the level of controversy associated with this action. There has not been substantial written or oral public comment received on this issue to-date, but staff anticipates public comment during the Council meeting will help evaluate the level of social or economic controversy related to this action.

5. There are no known **risks to the human environment** from establishing a separate BSAI cod quota for pot catcher processors and pot catcher vessels. Because the alternatives under consideration address an allocation of the cod resource and do not change the catch quotas or fishing practices, it is anticipated that there will be no risk to the human environment by taking this action.

6. It is not anticipated that this action would represent a decision in principle about **future consideration** of the pot sector and guide future actions with regard to establishing separate TACs based on catcher categories any more than has been previously considered. The trend in the groundfish fisheries off Alaska has been toward rationalization, and this action is in direct relation to this purpose under Amendment 64 and 67. Amendments 46 and 64 established TAC allocations for different gear sectors of the BSAI Pacific cod fisheries. Neither amendment prevented movement among those sectors or the entrance of new participants who hold an LLP groundfish license with a Bering Sea or Aleutian Islands area endorsement into BSAI Pacific cod fisheries, because these amendments did not require specific species endorsements. In April 1999, the Council initiated an analysis of alternatives to add Pacific cod endorsements to LLP groundfish licenses held by fixed gear vessels in the BSAI. Pacific cod endorsements are designed to address the concern about new participants entering the Pacific cod fisheries and movement of Pacific cod fishermen among the various sectors that use non-trawl gear. As stated in the problem statement, the combination of these actions is intended to promote stability in the BSAI fixed gear cod fishery until comprehensive rationalization is completed.

At the time the Council approved Amendment 64, it acknowledged that a further split among the pot sector may be necessary to stabilize the harvests of pot catcher processors and pot catcher vessels in the BSAI Pacific cod fishery, much like was done for the hook-and-line sector under Amendment 64 and had been done previously for the trawl cod fishery. Because the other gear sectors with allocations in the BSAI cod fisheries have already been split among vessels who operate as catcher processors and catcher vessels, the proposed action in this amendment is not perceived as a precedent for future actions, but rather is following a precedent set by previous actions.

7. The proposed action is a resource allocation issue that is limited in scope to the BSAI pot cod fishery and is not expected to have any significant individual or **cumulative effect** on the environment. The alternatives under consideration follows the intent of Amendment 64 and propose to split the BSAI pot cod TAC among catcher processors and catcher vessels as a means to provide stability in the fishery while a comprehensive rationalization plan is developed. Thus, this action is directly linked to a previous regulatory action that was approved in 1999 to establish separate TACs for the gear groups in the BSAI fixed gear cod fishery.

While there is no expected environmental impact, there may be an economic effect as a result of the proposed action in combination with other actions. The fixed gear cod fishery has experienced several policy changes in the past few years and this action, while potentially resulting in a small change individually, may have a larger effect in combination with other recent regulatory actions. The pending implementation of Amendment 67 will directly affect the number of vessels in the pot fleet in each sector, making it difficult to predict the exact number of vessels in either sector that would be fishing the allocations should the action be approved. It likewise makes it difficult to predict whether either sector would gain a relative advantage if the action was approved, not knowing how each sector would fare in the future, if they had to continue competing for one pot cod TAC.

However, because the qualification criteria approved in Amendment 67 was developed to allow the "core" pot vessels to qualify for a cod endorsement, it is expected that each sector could continue to harvest their relative historical share of the TAC. Under the proposed options, pot catcher processors have harvested 24-25% of the total pot cod harvest and catcher vessels have harvested 75-76%. These percentages equate to allocations of 4.4 - 4.6% of the fixed gear BSAI cod TAC to pot catcher processors and 13.7 - 13.9% to pot catcher vessels. This is based on the catch histories of all pot vessels participating in the fishery during 1995-99. The individual pot catcher processors that will potentially be 'endorsed' in the future to fish BSAI cod also harvested approximately 23.4 - 25% of the total catch harvested by 'endorsed' vessels during that same time period. Thus, the allocations to each pot sector are very similar whether they are determined using the catch history on which the options are based (all participants in 1995-99) or on the subset of vessels that will continue to be eligible to fish BSAI cod in the future.

8. There are no known effects on districts, sites, highways, structures, or objects listed or eligible for listing in the **National Register of Historic Places**, nor would the action cause loss or destruction of any significant scientific, cultural, or historical resources. This consideration is not application to this action.

9. NEPA requires NMFS to determine the degree to which an action may affect **threatened or endangered species** under the ESA. There are no known interactions between implementation of the alternatives under consideration and any ESA-listed species. This consideration is detailed in Section 3.1.7.

10. This action poses no known violation of Federal, State, or local laws or requirements for the **protection of the environment.**

4.2 Consistency with National Standards

Below are the 10 National Standards as contained in the Magnuson-Stevens Act (Act), and a brief discussion of the consistency of the proposed alternatives with those National Standards, where applicable.

National Standard 1 - Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery

Pacific cod fisheries will be managed as they currently are, regardless of the specific allocations between pot sectors, to achieve the TAC without overfishing. Pacific cod stocks in the BSAI are not currently in danger of overfishing and are considered stable. Overall yield in terms of cod catch will be unaffected by the allocations. In terms of achieving 'optimum yield' from the fishery, the Act defines 'optimum', with respect to yield from the fishery, as the amount of fish which:

(A) will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems;
(B) is prescribed as such on the basis of the maximum sustainable yield from the fishery, as reduced by any relevant economic, social, or ecological factor; and,
(C) in the case of an overfished fishery, provides for rebuilding to a level consistent with producing the maximum sustainable yield in such fishery.

Overall benefits to the Nation may be very slightly affected by these trade-offs, though our ability to quantify those effects is quite limited. The effects of the options on first wholesale revenues of the pot sectors are reflected in Table 3.10 of Section 3. While distributional impacts across fishing industry sectors are certainly implied by the alternatives, overall net benefits to the Nation would not be expected to change to an identifiable degree between any of the possible alternatives.

National Standard 2 - Conservation and management measures shall be based upon the best scientific information available.

Information in this analysis represents the most current, comprehensive set of information available to the Council, recognizing that some data (such as operational costs) is unavailable. All of the alternatives under consideration are based on information that appears to be consistent with this standard.

National Standard 3- To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

The alternatives appear to be consistent with this standard. The BSAI Pacific cod stock will continue to be managed as a single stock, although separate quotas for each pot gear sector would be established and monitored in-season by NMFS under Alternative 2.

National Standard 4 - Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such allocation shall be (A) fair and equitable to all such fishermen, (B) reasonably calculated to promote conservation, and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The allocation percentages being considered are based on industry sectors. Nothing in the alternatives considers residency as a criteria for the Council's decision. Residents of various states, including Alaska and the Pacific Northwest, participate in each of the pot sectors affected by these allocations. Within each pot sector, no further allocations are made to individual fishermen, nor are discriminations made among fishermen based on residency or any other criteria. Proposed allocations under Alternative 2 are based on industry sectors' historical shares during 1995-1999, and do not result in 'the acquisition' of any particular share of the privilege to any individual entity.

National Standard 5 - Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.

The wording of this standard was changed in the recent Magnuson-Stevens Act authorization, to 'consider' rather than 'promote' efficiency. Efficiency in the context of this change refers to economic efficiency, and the reason for the change, essentially, is to de-emphasize to some degree the importance of economics relative to other considerations (Senate Report of the Committee on Commerce, Science, and Transportation on S. 39, the Sustainable Fisheries Act, 1996). The analysis presents information relative to these perspectives, but does not point to a preferred alternative in terms of this standard. National Standard 5 recognizes the importance of various other issues in addition to economic efficiency.

National Standard 6 - Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

Establishing explicit allocations between the pot gear sectors will not likely reduce the flexibility of pot fishermen to respond to variations among groundfish and crab stocks any more so than Amendment 64, which established direct allocations to the pot and hook-and-line sectors. For example, with the implementation of Amendment 64, pot fishermen who traditionally rely on crab fisheries for the majority of their income, but switch to cod fishing in response to higher cod prices or lower crab stocks, are still able to do so, but their overall harvest is now constrained by the approved quota split. The alternatives in this amendment further serve to protect the traditional harvest levels taken by the pot catcher processors and pot catcher vessels, and by doing so, reduce the ability of one sector to expand their take over the other sector. It is important to note that upon implementation of the cod endorsements under Amendment 67 (effective January 1, 2003), the BSAI hook-and-line and pot gear Pacific cod fishery will be managed under a more restrictive limited entry program in which participants must qualify for a cod endorsement. This will inhibit the flexibility of all fixed gear sectors to respond to variations in other fisheries in an attempt to meet the goal of comprehensive rationalization of the groundfish fisheries.

National Standard 7 - Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

All of the alternatives under consideration appear to be consistent with this standard.

National Standard 8 - Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

Many of the coastal communities in Alaska and the Pacific Northwest participate in the crab and groundfish fisheries in one way or another, whether it be processing, support businesses, or as the harbor/home port to fishermen and processing workers. Major groundfish and crab ports in Alaska that process catch from the Bering Sea include Dutch Harbor, St. Paul, Akutan, Sand Point, King Cove, and Kodiak. Additionally, the Seattle, Washington area is home port to many catcher and catcher processor vessels operating in these fisheries. Summary information on these coastal communities is provided in the "Faces of the Fisheries" (NPFMC 1994) and the Steller Sea Lion SEIS (NMFS 2001c).
In terms of potential impacts resulting from the proposed pot gear split, the analysts reviewed data similar to that reviewed for Amendment 64: (1) harvest levels by vessels in each sector; (2) price and revenues resulting from that harvest; (3) where those harvests are delivered for processing or for first wholesale (in the case of catcher processors), and (4) the home port of vessels engaged in the Pacific cod fisheries. Some of this information is detailed in Chapter 2. Much of the information cannot be presented in its detailed form

due to confidentiality restrictions, but is summarized qualitatively. The information presented here does not attempt to trace the economic impact of these revenues through the communities involved, nor does this analysis attempt to predict changes in such economic activity from the proposed alternatives; rather, it is provided as a broad indicator of the relative importance of the Pacific cod fishery to vessels from these communities in the recent past.

It is important to note that the vessels described below do not represent the total number of pot vessels which participated during 1995-1999 and contributed to the catch history on which the options are based. This is because Amendment 67, which will be effective January 1, 2003, reduces the number of eligible vessels in the BSAI pot gear cod fishery to an estimated 6 pot catcher processors and 47 pot catcher vessels ≥60'. These estimates are preliminary, however, and may represent only a portion of the total number of vessels which may have an LLP license and qualify for a cod endorsement under Amendment 67, particularly in the case of the catcher vessels. Because the number of qualified pot vessels is not yet final, and implementation will likely initiate several appeals, this section presents information on only those vessels that appear will qualify to illustrate the relationship between the pot sector and communities. In addition, catcher vessels under 60' are not required to hold a cod endorsement under Amendment 67, thus, it is uncertain how many pot vessels <60' will participate in the BSAI pot cod fishery in the future. During 1995-1999, only 16 unique pot vessels <60' participated in the directed commercial BSAI cod fishery, so this estimate is used throughout the analysis. The qualification criteria and effects of the Council's preferred alternative for a gear/species endorsement under Amendment 67 is discussed in more detail in Section 2.2.1 and in Section 3.2.1.

Pot Catcher Processor Fleet - Community Linkages

There are an estimated six pot catcher processors that will qualify for a cod endorsement under Amendment 67, five of those are based in Washington and one in Kodiak, Alaska. Total first wholesale value attributed to these vessels from groundfish product (of which the vast majority was Pacific cod) was $6.8 million in 1999. First wholesale revenues from groundfish (cod) represented about 45.8% percent of the total revenues for these vessels in 1999. Total revenue is defined here as a mix of groundfish first wholesale revenues and crab ex-vessel and/or wholesale revenues, depending upon the vessel's activity. Crab is apparently the species of primary importance to this sector, representing about 54.2% ($8.06 million) of the total revenues. Crab also represented about 72% ($7.73 million) of the total estimated ex-vessel revenues attributed to these vessels in 1999.

Pot Catcher Vessel Fleet - Community Linkages

This sector is much more numerous and widely dispersed geographically than any of the other sectors involved in the Pacific cod fishery. It also exhibits a wider variety of fisheries and gear types, in addition to fishing for cod with pot gear. There are 47 pot catcher vessels ≥60' that appear to qualify for a cod endorsement under Amendment 67. In the year 2000, total revenues attributable to Pacific cod caught with pot gear for all 47 vessels was $7.3 million, while total revenues for these same vessels in all fisheries (all species and gear types) totaled $17.7. Thus, Pacific cod represented about 41% of the total revenues for this sector. Crab fisheries accounted for the majority of the revenues for these vessels ($10.1 million or 57%).

Note that the 2000 data do not include halibut harvests, however, halibut does not appear to be a large contributor to the pot catcher vessels' revenues. In 1999 only 6 of the 47 vessels harvested 360,000 pounds of halibut, earning an estimated $736,000.

In terms of community of origin, 29 of the vessels ≥60' are based in Washington, 15 in Alaska, and the remaining 3 are in California and Oregon. Of the vessels home ported in Alaska, 12 are from Kodiak, 2 from Sand Point, and 1 from King Cove.

Although there were 16 pot catcher vessels <60' that participated in the fishery, the <60' fleet would not be affected by Amendment 67 and thus it is uncertain how many of these smaller vessels would be participating in the future. However, hook-and-line and pot gear vessels <60' have a separate allocation of 1.4% of the fixed gear BSAI cod fishery under Amendment 64.

Processors Taking Catcher Vessel Deliveries

Other than from trawl vessels, deliveries of BSAI cod to shorebased processors come almost exclusively from pot boats. In 1998, over 9,000 mt was delivered by pot catcher vessels. The vast majority of those deliveries were to shore plants in Dutch Harbor and Akutan, with some deliveries to King Cove. These deliveries of Pacific cod contribute to the economies of the shore plants and the communities in which they are located, though these amounts are unlikely to be significant in the context of the other groundfish, pollock, and crab processing activities that occur in these same plants and communities. With the exception of the King Cove plant, they all have small purchases of Pacific cod relative to other groundfish, particularly pollock. To the extent they do purchase cod, the majority of that comes from trawl deliveries (about 28,000 mt in 1998). For the King Cove plant, Pacific cod does constitute the majority of their groundfish purchases (over half), with nearly half of that amount coming from pot vessels.

A split of the pot quota as proposed would both constrain and stabilize the relative amount of cod harvested by catcher vessels and delivered to these plants, as all of the alternatives under consideration would split the pot cod quota according to historical catch levels during 1995-1999. With regard to impacts on the communities in which these plants are located, these same plants are likely to be limited to their historic levels of cod processing regardless, via the sideboard provisions of the American Fisheries Act (AFA).

Because the percentage allocations resulting from the proposed options vary by a maximum of 0.2 percent (of the hook-and-line and pot gear share of the BSAI Pacific cod TAC), there is not expected to be a discernible impact to communities among the alternatives to the status quo (no split). Under the 2002 pot gear Pacific cod TAC, for instance, 0.2 percent represents about 188 mt. Compared to the 2001 baseline, the alternatives to establish an annual allocation for each pot sector would decrease the amount of quota harvested by pot catcher vessels by 1.5 percent (1,408 mt using the 2002 TAC). This would seem to represent an implicit negative impact to the catcher vessel sector, if one assumes that the harvest distribution in 2001 would be expected to continue in the future. It is extremely difficult to predict whether, absent a pot sector split, future effort in the pot catcher vessel sector would increase above the percentages experienced in 2001 or remain closer to the historical averages represented by the options (1995-1999). This makes it difficult to determine whether the action would have a constraining effect on the catcher vessel sector in the future. This is discussed in more detail in Section 3.2.

National Standard 9 -Conservation and management measures shall, to the extent practicable, (A) minimize bycatch, and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

Chapter 3 presents information on historical bycatch patterns in the Pacific cod fixed gear target fisheries. In summary, bycatch rates in the Pacific cod fisheries are low overall. Because each pot sector has similar bycatch and discard rates and the alternatives would establish a quota split similar to what has occurred in the recent past, this action would not be expected to have any significant bycatch implications.

National Standard 10 - Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

The Council's alternatives appear to be consistent with this standard. None of the options proposed to provide a direct allocation to each pot gear sector would change safety requirements for fishing vessels. If the alternative reduces competition between pot sectors to harvest their share of the BSAI Pacific cod TAC, it may enhance safety at sea.

4.3 Section 303(a)(9) - Fisheries Impact Statement (Spillover Impacts)

This section of the Magnuson-Stevens Act requires that any management measure submitted by the Council take into account potential impacts on the participants in the fisheries, as well as participants in adjacent fisheries. Impacts to participants in the pot cod fishery are the topic of Section 3.0. Potential impacts to other fisheries could potentially result from a change in the Pacific cod pot gear apportionments, as vessels which may be constrained by that allocation may move into other fisheries to attempt to make up lost revenues. Pot vessels which are constrained by the split may choose to exert additional effort in the Gulf of Alaska State water cod fisheries which are not limited entry, and which are limited to pot and jig gear. However, the options under consideration propose to split the pot sector's share of the Pacific cod hook-and-line and pot gear TAC based on the historical harvest distribution among pot sectors during 1995-1999, thus, it is not expected that either sector would be severely constrained compared to what they have harvested in the past.

In addition, recall that under Amendment 67, the Pacific cod fixed gear fishery in Federal waters will be limited in the future to those individual vessels that qualify for a BSAI Pacific cod endorsement by meeting specific year and poundage requirements. Thus, "endorsed" pot vessels will experience less competition for the pot TAC from other pot vessels upon implementation of Amendment 67. Because Amendment 67 does not affect pot vessels <60', it is possible that this sector could be constrained by the pot allocation in the future and potentially move into other fisheries. However, the <60' fleet has historically taken a very small percentage of the total pot vessel harvest, averaging less than 100 mt since 1996. In addition, the <60' fleet has a separate allocation established under Amendment 64 of 1.4% of the hook-and-line and pot gear BSAI cod TAC. Thus, it is not expected, because of the anticipated effects of Amendment 67 and the separate allocation to <60' pot vessels, that this action will have significant spillover effects.

4.4 Initial Regulatory Flexibility Analysis (IRFA)

4.4.1 Analysis Requirements

The Regulatory Flexibility Act (RFA), first enacted in 1980, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are: (1) to increase agency awareness and understanding of the impact of their regulations on small business, (2) to require that agencies communicate and explain their findings to the public, and (3) to encourage agencies to use flexibility and to provide regulatory relief to small entities.

The RFA emphasizes predicting significant adverse impacts on small entities as a group distinct from other entities and on the consideration of alternatives that may minimize the impacts while still achieving the stated objective of the action. When an agency publishes a proposed rule, it must prepare and make available for

public review an Initial Regulatory Flexibility Analysis (IRFA) that describes the impact of the proposed rule on small entities. When an agency publishes a final rule, it must prepare a Final Regulatory Flexibility Analysis (FRFA). Analysis requirements for the IRFA and FRFA are described below in more detail. In the case of the issues and alternatives considered in this analysis (BSAI Amendment 68), the Council will make recommendations for the preferred alternative, and NMFS will develop proposed regulatory amendments to implement the Council's preferred alternative. Prior to publishing the proposed rule, the IRFA presented here will be completed to reflect analysis of the Council's preferred alternative.

The IRFA must contain:

- A description of the reasons why action by the agency is being considered;
- A succinct statement of the objectives of, and the legal basis for, the proposed rule;
- A description of, and where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);
- A description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap or conflict with the proposed rule;
- A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the Magnuson-Stevens Act and any other applicable statutes and that would minimize any significant economic impact of the proposed rule on small entities. Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:

    1. The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
    2. The clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;
    3. The use of performance rather than design standards;
    4. An exemption from coverage of the rule, or any part thereof, for such small entities.

In determining the scope, or 'universe', of the entities to be considered in an IRFA, staff generally includes only those entities, both large and small, that can reasonably be expected to be directly or indirectly adversely affected by the proposed action. If the effects of the rule fall primarily on a distinct segment, or portion thereof, of the industry (e.g., user group, gear type, geographic area), that segment would be considered the universe for the purpose of this analysis.

Currently, insufficient quantitative economic information exists on the fishery under review to determine the economic significance of this action. In the absence of such quantitative social and economic data, a qualitative-based Initial Regulatory Flexibility Analysis is conducted below to comply with the RFA.

4.4.2 Definition of a Small Entity

The RFA recognizes and defines three kinds of small entities: (1) small businesses, (2) small non-profit organizations, and (3) and small government jurisdictions.

Small businesses. Section 601(3) of the RFA defines a 'small business' as having the same meaning as 'small business concern' which is defined under Section 3 of the Small Business Act. 'Small business' or 'small business concern' includes any firm that is independently owned and operated and not dominate in its field of operation. The SBA has further defined a "small business concern" as one "organized for profit, with a place of business located in the United States, and which operates primarily within the United States or which makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials or labor...A small business concern may be in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that where the form is a joint venture there can be no more than 49 percent participation by foreign business entities in the joint venture."

The SBA has established size criteria for all major industry sectors in the U.S. including fish harvesting and fish processing businesses. A business involved in fish harvesting is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has combined annual receipts not in excess of $3.5 million for all its affiliated operations worldwide. A seafood processor is a small business if it is independently owned and operated, not dominant in its field of operation, and employs 500 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. A business involved in both the harvesting and processing of seafood products is a small business if it meets the $3.5 million criterion for fish harvesting operations. Finally, a wholesale business servicing the fishing industry is a small businesses if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

The SBA has established "principles of affiliation" to determine whether a business concern is "independently owned and operated." In general, business concerns are affiliates of each other when one concern controls or has the power to control the other, or a third party controls or has the power to control both. The SBA considers factors such as ownership, management, previous relationships with or ties to another concern, and contractual relationships, in determining whether affiliation exists. Individuals or firms that have identical or substantially identical business or economic interests, such as family members, persons with common investments, or firms that are economically dependent through contractual or other relationships, are treated as one party with such interests aggregated when measuring the size of the concern in question. The SBA counts the receipts or employees of the concern whose size is at issue and those of all its domestic and foreign affiliates, regardless of whether the affiliates are organized for profit, in determining the concern's size. However, business concerns owned and controlled by Indian Tribes, Alaska Regional or Village Corporations organized pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601), Native Hawaiian Organizations, or Community Development Corporations authorized by 42 U.S.C. 9805 are not considered affiliates of such entities, or with other concerns owned by these entities solely because of their common ownership.

Affiliation may be based on stock ownership when (1) A person is an affiliate of a concern if the person owns or controls, or has the power to control 50% or more of its voting stock, or a block of stock which affords control because it is large compared to other outstanding blocks of stock, or (2) If two or more persons each owns, controls or has the power to control less than 50% of the voting stock of a concern, with minority

holdings that are equal or approximately equal in size, but the aggregate of these minority holdings is large as compared with any other stock holding, each such person is presumed to be an affiliate of the concern. Affiliation may be based on common management or joint venture arrangements. Affiliation arises where one or more officers, directors, or general partners controls the board of directors and/or the management of another concern. Parties to a joint venture also may be affiliates. A contractor and subcontractor are treated as joint venturers if the ostensible subcontractor will perform primary and vital requirements of a contract or if the prime contractor is unusually reliant upon the ostensible subcontractor. All requirements of the contract are considered in reviewing such relationship, including contract management, technical responsibilities, and the percentage of subcontracted work.

Small organizations. The RFA defines "small organizations" as any nonprofit enterprise that is independently owned and operated and is not dominant in its field.

Small governmental jurisdictions. The RFA defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of less than 50,000.

4.4.3 Reason for Considering the Proposed Action

Members of the pot gear sectors have expressed concern that structural changes in other fisheries, fluctuations in relative fish prices, and fluctuations in TACs/GHLs might disrupt the current BSAI Pacific cod fishery. Freezing the current catch distributions through distinct allocations to each gear sector was considered a reasonable first step to help mitigate against future potential instability among participants in these fisheries. Amendment 64, effective September 1, 2000, instituted direct allocations to the hook-and-line catcher processor, hook-and-line catcher vessel, and pot sectors. A further split among the pot sectors was deemed necessary at the time Amendment 64 was approved by the Council, in order to prevent one pot sector from encroaching on the other's historical harvest level. This action was initiated in a trailing amendment because the public had not been noticed that the Council would take such action at that time. The proposed action under Amendment 68 would apportion the pot sector allocation among pot catcher processors and pot catcher vessels, as has been implemented for the BSAI hook-and-line Pacific cod fleets.

4.4.4 Objectives of, and Legal Basis for, the Proposed Action

The legal basis for this action is that allocation of the Pacific cod TAC is allowed under the Magnuson-Stevens Fishery Conservation and Management Act.

4.4.5 Number and Description of Affected Small Entities

For purposes of the IRFA, all Pacific cod pot catcher vessels can be considered small businesses, with annual receipts of less than $3.5 million. The pot fleet in most cases earns the majority of their revenues in the crab fisheries (81% on average during the combined 1988-98 seasons), but supplements that income with revenues from groundfish, primarily cod (NMFS 2001b). In 2000, for instance, of the 47 catcher vessels $\geq$60' that appear to qualify for a BSAI cod endorsement, crab harvests accounted for 57% of their total revenues ($10.1 million) and cod accounted for about 41%. Given the current status of the crab fisheries compared to 1996 and 1997, total pot catcher vessel revenues have declined due to lower crab quotas, lower prices, and competition from increasing supplies of Russian crab in Japanese markets (NMFS 2001b, p. 2-71). Thus, the pot fleet is now generating a smaller percentage of their overall income from the BSAI crab fisheries, and in the near future, crab quotas are likely to continue to decrease.

Preliminary estimates show that the BSAI pot cod fleet would be reduced to approximately 6 catcher processors and 47 catcher vessels ≥60' under the Council's preferred alternative for Amendment 67. The total effects of this amendment will not be seen immediately upon implementation on January 1, 2003, as some time will be necessary to go through the appeals process associated with interim licenses. However, all 47 pot vessels that potentially qualify for a cod endorsement appear to have earned revenues of less than $3.5 million and thus are considered small businesses. Some of the catcher processor vessels may be considered large entities, as some individual catcher processors earned revenues of greater than $3.5 million during the years 1995 - 1999. However, little is known about the ownership structure of the vessels in the fleet, for instance whether one entity is affiliated with owners of multiple vessels, so it is possible that this IRFA overestimates the number of small entities by estimating that all pot catcher vessels that would be affected would be considered small entities.

Recall that Amendment 67 does not restrict the smallest entities in the pot fleet–pot catcher vessels <60' would not need a Pacific cod endorsement to continue prosecuting the BSAI Pacific cod fishery. There are approximately 117 pot and hook-and-line vessels <60' that appear to be LLP qualified to use non-trawl gear in the BSAI groundfish fisheries, yet only 16 pot catcher vessels <60' are documented to have made at least one landing in the directed BSAI Pacific cod fishery since 1995. In essence, a better estimate of the number of small entities (catcher vessels) that could potentially be affected by this action may be 63 (47 vessels ≥60' plus 16 vessels <60').

Shorebased plants and floating processors operating within Alaskan waters process most of the Pacific cod harvested by pot catcher vessels. Five of these processors would likely be considered small entities. The other five processors would likely be considered large entities, and they processed the vast majority of the shoreside landings in 1998 (about 9,000 mt). Two communities are home to the primary shorebased processors of BSAI Pacific cod. Those communities are Dutch Harbor and Akutan. Other communities are also home to shorebased processors that process limited amounts of BSAI Pacific cod. These communities are King Cove, Egegik, and Kenai.

Vessels are home ported or owned by persons living throughout Alaska, the Pacific Northwest, and other states in the U.S. Each of the Alaska communities would be considered small entities, as would some of the communities in other states. A discussion of the relative importance of the cod fisheries to these communities was included under the discussion of National Standard 8. Of the estimated 6 pot catcher processors that would be eligible to fish BSAI Pacific cod: five of these are home ported in Washington and one in Kodiak, Alaska (see BSAI Amendment 67, NPFMC 2000a). Of the 47 pot catcher vessels ≥60' that would qualify under the Council's preferred alternative for a Pacific cod endorsement, 29 are home ported in Washington, 15 in Alaska, and the remaining two are in California and Oregon. Of the Alaska-qualified vessels, twelve are from Kodiak, one from King Cove, and two from Sand Point.

4.4.6 Relevant Federal Rules that may Duplicate, Overlap, or Conflict with the Proposed Action

This analysis did not uncover any existing Federal rules that duplicate, overlap, or conflict with any of the actions proposed in the alternatives.

4.4.7 Measures Taken to Reduce Impacts on Small Entities

As with many allocation-based management measures, the alternatives propose a percentage allocation of the TAC among competing groups of vessels, representing a tradeoff in terms of impacts. In this case, vessels

in one group (catcher vessels) are primarily small entities, but it is difficult to predict whether they would be negatively or positively impacted. All of the alternatives under consideration would allocate about the same amount of cod to catcher vessels delivering to shorebased processors that they have historically harvested (based on a percentage of the hook-and-line and pot gear share of the BSAI Pacific cod TAC), but up to 1.5 percent less than is represented by the 2001 baseline scenario.

The determination of whether small entities are adversely affected then, is based on a prediction of what percentage of the pot cod TAC catcher vessels would take in the future if no action was taken. From one perspective, setting a direct allocation to each pot sector will keep one sector from increasing its share relative to what it could do under the status quo. Since 1999, the pot catcher vessel sector has slightly increased its share of the pot sector catch: 87% in 2000 and 83% in 2001. In addition, under Amendment 67, the catcher vessel sector would be most likely to increase its relative share in the absence of a quota split, with new entry from the <60' fleet. From another perspective, adoption of a quota split would serve to stabilize the current share of the smallest entities, and keep the larger catcher processors from increasing their share. The ability to predict the future conditions of the fishery preclude the analysts from making a definitive determination of the impact on small entities.

Nothing in the proposed amendment would result in any changes in reporting or recordkeeping requirements, or any obvious disproportionate regulatory impacts to small entities relative to large.

One of the points raised in opposition to the fixed gear split approved under Amendment 64 was that there was considerable latent capacity in the pot catcher vessel fleet (many pot vessels are qualified under the LLP but to date have not participated to a great degree in the cod fisheries), thus freezing that sectors' share of the cod quota may disadvantage pot vessels which do participate significantly in the cod fishery if vessels holding latent licenses decide to substantially increase their participation in the future. This problem is primarily mitigated by Amendment 67, however, which created species and gear LLP endorsements for the cod fisheries, based on a minimum level of landings and years of participation. The intent of that amendment is to eliminate the latent capacity described above, and effectively reduce the pot fleet to those LLP qualified vessels which have demonstrated substantial dependence on, and participation in, the BSAI cod fishery. Thus, the potential competition for the pot catcher vessel quota would be greatly reduced and a more stable operating environment would exist for the remaining vessels in each of the pot sectors. Recall that a cod endorsement under Amendment 67 is not required for vessels <60', however, so the fishery could potentially realize increased effort from that sector in the future.

4.4.8 Potential Impacts of the Alternatives on Small Entities

Most persons operating in the fishery impacted by the proposed action are small entities given their expected annual gross revenues of less than $3.5 million. The ownership characteristics of vessels operating in the fishery have not been analyzed to determine if they are independently owned and operated or affiliated with a larger parent company. Furthermore, because we cannot quantify the exact number of small entities that may be indirectly affected by this action, or quantify the magnitude of those effects, we cannot make a definitive finding of non-significance under the RFA. However, because the proposed action(s) would result in 'freezing' a percentage distribution very close to the average harvest level during 1995-99, impacts would be expected to be minimal relative to the no action alternative. Again, this assumes that the distribution of harvest would not change significantly under the no action alternative. Estimates of such a potential change in the absence of an allocation cannot be made, though indications are that each pot sector may be looking to increase their relative share of the pot harvest, especially given the current opilio GHL and the limited alternative fisheries. The pot catcher vessel sector has in fact increased its relative share of the pot gear quota

in 2000 and 2001, and the number of <60' pot vessels is not constrained by the cod endorsement requirement under Amendment 67. In that case, a number of small entities could be negatively impacted, though the magnitude of that impact (and whether it would be 'significant') cannot be determined.

It is possible that potential revenues could be decreased for small entities, but that again depends on the level of catch which might have been achieved in the absence of an allocation. For example, if the 2001 pot sector share for pot catcher vessels is 83% (equating to an allocation of 15.2% of the fixed gear TAC) and an allocation is made based on pot catcher vessels harvesting 75% of the pot sector quota (equating to an allocation of 13.7% of the fixed gear TAC), that sector would be allocated 1.5 percentage points less (1,408 mt based on the 2002 TAC) than the recent year's share, even though such an allocation may be greater relative to what they might achieve in the future without a direct allocation. Impacts of this action on potential revenues cannot be isolated from other factors including price fluctuation, amount of effort exerted by the <60' fleet, and stock and price fluctuation of alternative and significant fisheries such as crab. Additional detail will be provided in the Final Regulatory Flexibility Act analysis by NMFS, after the Council makes a final decision on this amendment package. However, no substantial changes in the structure of the fishery are expected to occur as a result of the options under consideration; on the contrary, the action is intended to establish separate TACs for each pot sector based on the harvests that have been made by each sector in the recent past.

Cost data for the fishery's harvesting and processing sectors are not currently available. For this reason, we cannot complete a quantitative cost/benefit examination of each of the proposed alternatives, nor derive comparative net benefit conclusions about the competing alternatives and options. However, because this action will not eliminate the fishery or even reduce the annual Pacific cod TACs, we can conclude that the net benefits to the U.S. economy would not decrease by $100 million annually once costs are included in the calculation. Therefore, based on this one criterion, none of the alternatives constitute a 'significant' action under E.O. 12866, recognizing that there may be distributional economic impacts among the pot sectors affected by this proposed action, also recognizing that, in general, distributional results will be substantially similar to the current situation.

4.4.9 Conclusion

None of the alternatives are expected to result in a "significant regulatory action" as defined in E.O. 12866.

4.5 Marine Mammal Protection Act

The MMPA of 1992 (16 U.S.C. 1361 *et seq*.), as amended through 1996, establishes a federal responsibility to conserve marine mammals with management responsibility for cetaceans (whales) and pinnipeds (seals) other than walrus vested with the Department of Commerce, NMFS. The Department of the Interior, U.S. Fish and Wildlife Service, is responsible for all other marine mammals in Alaska including sea otters, walrus, and polar bear. Congress found that certain species and population stocks of marine mammals are or may be in danger of depletion due to human activities. Congress also declared that marine mammals are resources of great international significance and should be protected and encouraged to develop to the greatest extent feasible commensurate with sound policies of resource management.

Species listed under the Endangered Species Act present in the management area were listed in the previous section. Marine mammals not listed under the ESA that may be present in the BSAI management area include cetaceans, [minke whale (*Balaenoptera acutorostrata*), killer whale (*Orcinus orca*), Dall's porpoise *(Phocoenoides dalli*), harbor porpoise (*Phocoena phocoena*), Pacific white-sided dolphin (*Lagenorhynchus*

obliquidens), and the beaked whales (e.g., *Berardius bairdii* and *Mesoplodon spp*.)] as well as pinnipeds [Pacific harbor seal (*Phoca vitulina*), northern fur seal (*Callorhinus ursinus*), Pacific walrus (*Odobenus rosmarus*), spotted seal (*Phoca largha*), bearded seal (*Erignathus barbatus*), ringed sea (*Phoca hispida*) and ringed seal (*Phoca fasciata*)], and the sea otter (*Enhydra lutris*).

The primary management objective of the MMPA is to maintain the health and stability of the marine ecosystem, with a goal of obtaining an optimum sustainable population of marine mammals within the carrying capacity of the habitat. The MMPA is intended to work in concert with the provisions of the Endangered Species Act (see Section 2.2). The Secretary is required to give full consideration to all factors regarding regulations applicable to the "take" of marine mammals, including the conservation, development, and utilization of fishery resources, and the economic and technological feasibility of implementing the regulations. If a fishery affects a marine mammal population, then the potential impacts of the fishery must be analyzed in the appropriate EA or EIS, and the Council or NMFS may be requested to consider regulations to mitigate adverse impacts. This action is intended to establish in regulation specific cod TACs to each pot gear sector in the BSAI, based on the historical harvest distribution. No adverse impacts on marine mammals are anticipated as a result of implementing the alternatives under consideration.

4.6 Coastal Zone Management Act

Implementation of each of the alternatives would be conducted in a manner consistent, to the maximum extent practicable, with the Alaska Coastal Management Program within the meaning of Section 30(c)(1) of the Coastal Zone Management Act of 1972 and its implementing regulations.

4.7 Executive Order 12898

E. O. 12898 focuses on environmental justice in relation to minority populations and low-income populations. The EPA defines environmental justice (EJ) as the: "fair treatment for people of all races, cultures, and incomes, regarding the development of environmental laws, regulations, and policies." This executive order was spurred by the growing need to address the impacts of environmental pollution on particular segments of our society. This order (Environmental Justice, 59 Fed. Reg. 7629) requires each Federal agency to achieve environmental justice by addressing "disproportionately high and adverse human health and environmental effects on minority and low-income populations." The EPA responded by developing an Environmental Justice Strategy which focuses the agency's efforts in addressing these concerns.

In order to determine whether environmental justice concerns exist, the demographics of the affected area should be examined to determine whether minority populations and low-income populations are present, and if so, a determination must be made as to whether implementation of the alternatives may cause disproportionately high and adverse human health or environmental effects on these populations. Environmental justice concerns typically embody pollution and other environmental health issues, but the EPA has stated that addressing environmental justice concerns is consistent with NEPA and thus all Federal agencies are required to identify and address these issues.

Pot vessels are home ported or owned by persons living throughout Alaska, the Pacific Northwest, and other states in the U.S. Under Amendment 67, an estimated 6 pot catcher processors would be eligible to fish BSAI Pacific cod: five of these are home ported in Washington and one in Alaska. Of the 47 pot catcher vessels $\geq$60' that would qualify under the Council's preferred alternative for a cod endorsement, 29 are home ported in Washington, 15 in Alaska, and the remaining 3 are in California and Oregon. Of the Alaska-qualified vessels, twelve are from Kodiak, one from King Cove, and two from Sand Point. A discussion of the relative

importance of fisheries to these regions and their population and minority profiles are included in Chapter 3 of the Steller Sea Lion SEIS (Section 3.12.2.1) and Appendix F(4)(NMFS 2001c).

Overall, the population structures of these regions vary considerably, but in the Aleutian and Kodiak regions there are predominant Alaska Native and other minority populations. Kodiak is about 13 percent Native. The predominant minority in the city and its surroundings is Asian and Pacific Islanders, followed by Natives and Blacks. In King Cove and Sand Point, Alaska Natives make up about 48% and 44% of the populations, respectively, with Asian and Pacific Islanders the next largest minority population. While Washington and Oregon's relationship to the Alaska groundfish fishery is more involved than some regions of Alaska (in terms of absolute number of jobs), it could be argued that the fishery is less important or vital than for the Alaskan communities considered. For example, the size of Seattle dilutes the overall impact of the Alaska groundfish fishery jobs, whereas in Alaskan communities such jobs represent a much greater proportion of the total employment in the community (Appendix F, p. FI-75). Thus, while the majority of pot vessels that appear eligible to fish BSAI pot cod in the future are homeported in Washington, there are relatively more individual catcher vessels that are attributed to Alaskan communities than there are catcher processors. It is this distinction, and the minority populations associated with these communities, that would determine whether this action may have any environmental justice impacts.

The difficulty associated with determining whether one pot sector would gain an advantage over the other under this action has been previously discussed in Section 3.0 and the IRFA. It is extremely difficult to predict whether, in the future, absent a pot sector split, effort in the pot catcher vessel sector would increase above the percentages experienced in 2001 or remain closer to the historical averages represented by the options. This makes it difficult to determine whether the action would have a constraining effect on the either sector in the future and the associated social and economic impacts. In addition, with the implementation of Amendment 67, both sectors will experience a substantial reduction in the fleet, making it more difficult to predict the relative harvest of each sector absent a split of the pot cod TAC.

Given these circumstances, no definitive determination can be made regarding whether this action would negatively impact participants in the BSAI pot cod fishery, and thus, whether these may be considered environmental justice impacts. However, the action proposed in this amendment is to further define the current cod allocation to the BSAI pot gear sectors, based on the historical distribution of the harvest among the two sectors. Thus, regardless of whether one sector would receive an economic benefit upon approval of this action relative to the status quo, it has been determined that the proposed actions do not appear to have any significant individual or cumulative environmental or human health effects, thus no distinct population, minority or otherwise, should be affected in this regard.

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